



Site Water Management Plan

Rosemont Copper World Project

Pima County, Arizona

Project # 1720214024 | Rosemont Copper Company

Prepared for:

Rosemont Copper Company

5255 E. Williams Circle, Tucson, AZ 85711 United States

6/24/2022



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Project Location

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Pima County, Arizona

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Appendix A: Site-Wide Water Balance Memorandum

List of Acronyms

%	Percent
ADEQ	Arizona Department of Environmental Quality
ADWR	Arizona Department of Water Resources
amsl	Above Mean Sea Level
APP	Aquifer Protection Permit
A.R.S.	Arizona Revised Statute
AZPDES	Arizona Pollution Discharge Elimination System
BADCT	Best Available Demonstrated Control Technology
BMP	Best Management Practices
CN	Curve Number
EPA	Environmental Protection Agency
GCL	Geosynthetic Clay Layer
HDPE	High-Density Polyethylene
HEC-HMS	Hydrological Engineering Center – Hydrological Modeling Software
HEC-SSP	Hydrological Engineering Center – Statistical Software Package
HLF	Heap Leach Facility
HLP	Heap Leach Pad
LCRS	Leak Collection and Recovery System
LLDPE	Linear Low-Density Polyethylene
MCL	Maximum Contaminant Levels
Mt	Million Tons
MSGP	Mining Multi-Sector General Permit
MUSLE	Modified Universal Soil Loss Equation
NOAA	National Oceanic and Atmospheric Administration
PE	Pan Evaporation
PLS	Pregnant Leach Solution
RUSLE	Revised Form of the Universal Soil Loss Equation
SCS	Soil Conservation Service
SWMP	Site Water Management Plan
SWWB	Site-Wide Water Balance
SX-EW	Solvent Extraction – Electrowinning
TDS	Total Dissolved Solids
TSF	Tailings Storage Facility
TSS	Total Suspended Solids
TT	Tetra Tech
US	United States
USDA	United States Department of Agriculture
WRF	Waste Rock Facility

1.0 Introduction

Wood Environment & Infrastructure Solutions, Inc. (Wood) has developed this Site Water Management Plan (SWMP) for the Rosemont Copper Company (Rosemont) Copper World Project (Project). The SWMP presents the proposed methods to control both process solution, contact stormwater and non-contact stormwater through engineered controls and Best Management Practices (BMPs). The facilities' water demand and discharge rates are considered in engineered control designs that extend beyond the estimated mine life (15 years) to post-closure. Wood, in collaboration with Rosemont, developed the SWMP in accordance with the Arizona Mining Best Available Demonstrated Control Technology (BADCT) Guidance Manual (ADEQ, 2004) to achieve compliance with the Arizona Department of Environmental Quality (ADEQ) Aquifer Protection Permit (APP) program.

1.1 Purpose and Objectives

The over-arching purpose of the SWMP is to provide guidance and clearly define APP requirements for the management of stormwater flows in conjunction with the management of expected operational flows. Specific objectives include:

- Design and implementation of effective engineered (permanent and long-term) and construction (temporary and short-term) controls (i.e., BMPs);
- Minimize erosional effects to areas of the Project and outlying undisturbed areas adjacent to the Project, including naturally occurring drainages; and
- Assure the integrity of mine facilities during active mining, closure, and post-closure.

1.2 Project Description

The proposed Project is located on private land in the Santa Rita Mountains, approximately 12 miles south-east of Sahuarita, Arizona, in Pima County. A general location map of the Project is presented in Figure 1. The Project will consist of six open pits, a waste rock facility (WRF), a heap leach pad (HLP), two tailings storage facilities (TSFs), Heap Leach Facility (HLF) ponds, process area ponds, a primary settling pond, grinding-flotation circuit, concentrate leach, acid plant, precious metal recovery, solvent extraction-electrowinning circuit, truck shop, administration building, roads, and ancillary facilities. Conceptual level designs were developed for these facilities. The general facility arrangement is presented on Figure 1.

The following sections provide a brief description of the sulfide ore and oxide ore process and the associated facilities.

1.2.1 Sulfide Ore Processing and Tailings

Sulfide ore will be transported by truck to the primary crusher, then by conveyor to the milling facilities where the ore will be processed. Sulfide ore processing flow sheet is shown on Figure 2. The sulfide ore is crushed using sufficient water and further milled at the process plant. At this stage, the milled ore is passed to the flotation plant, and the metal-rich froth is extracted and then concentrated as a final product to be shipped off-site or processed on-site in a concentrate leach circuit. The remaining slurry/tailings are passed through a thickener to extract water and form thickened tailings. The thickened tailings are then "cycloned" where sand is separated for use in constructing the TSF embankments, and the remaining fine tailings are stored in the TSFs.

The primary data and assumptions for water management for sulfide ore processing and tailings are provided in the Water Balance Memo (Appendix A). Rosemont conservatively estimates that the initial water content of ore (pre-crushing) is 3.5 percent (%) by weight and will rise to 5% after crushing. The crushing

water requirement is fulfilled partially from reclaimed process and seepage collected from the TSFs. Additional make-up water will be supplied from water production wells located northwest of the Project and from other sources such as water recovered from pit sumps or pit sumps or pit dewatering associated with the Satellite pits, if needed.

The water content of thickened tailings is assumed at 31.8%. Sand extracted during cycloning is assumed to be 30% dry tailings by weight, and the loss of water during cycloning is assumed to be 12% of water in thickened tailings

Based on the assumptions used for the design of TSFs, the tailings embankment occupies 20% of TSFs footprint area. The other 80% of the TSF footprint includes the decant pond area, wet beach area, dry beach area, and the drying beach area are assumed to be 12%, 20%, 24% and 24% of the total tailings area, respectively. The evaporation factors for the decant pond area, wet beach area, dry beach area, and the drying beach area are assumed to be 0.75, 0.7, 0.05, and 0.5, respectively. These factors or percentages were applied to the pan evaporation (PE) values to estimate the evaporation from each of the identified TSF areas. For example, the evaporation from the decant pond area was calculated by taking 75% of the pan evaporation number.

The seepage through the tailings that will be collected by the seepage collection system is assumed to be 684 gpm for TSF-1 and 372 gpm for TSF-2, based on seepage modeling (Appendix B). The seepage collection system consists of a network of perforated pipes on the prepared subbase of the TSF and seepage collection trenches at topographic low points along the downgradient side of the TSF. The perforated piping network will convey seepage to the trenches and seepage bypassing the piping network within the alluvium will also be collected in the trenches. Based on modelling of the seepage flow, approximately 11.0 gpm and 6.4 gpm from TSF-1 and TSF-2, respectively, is expected to bypass the seepage collection system (perforated pipes and seepage collection trenches) and infiltrate into the bedrock below the TSFs.

1.2.2 Oxide Ore Processing and Heap Leaching

Oxide ore processing flowsheet is shown on Figure 3. The oxide ore is crushed and then agglomerated. The agglomerated ore is placed on layers on the heap leach pad (HLP). In addition to crushed and agglomerated oxide ore, run-of-mine (ROM) oxide ore will also be placed on the HLP. Dilute sulfuric acid solution is sprinkled on the heap progressively and allowed to drain. The leachate collected from the HLP is conveyed to the pregnant leach solution (PLS) pond and sent to the solvent extraction – electrowinning (SX-EW) plant. The barren solution returned from the plant is stored in the raffinate pond, reconditioned by lowering the pH with sulfuric acid and recycled to irrigate the heap. Losses in the plant, raffinate pond, etc., are compensated by adding the required amount of fresh water and acid. The footprint of the HLF area progresses from Year 1 through Year 9, when it reaches its maximum footprint of 297 acres (to the toe of the heap).

The primary data and assumptions for water management for oxide ore processing are provided in the Site-Wide Water Balance (Appendix A). The initial water content of ore (pre-crushing) is considered 3.5% and will rise to 5% after crushing. The crushing water requirement is fulfilled from fresh water. The water content of the agglomerated ore is assumed at 15%. The additional water requirement for agglomeration is supplied from fresh make-up water.

2.0 Site Conditions

The Project is in an arid region typical of the United States (US) desert southwest. The surrounding terrain is mountainous and rugged, with elevations ranging from 3,800 to 6,300 feet above mean sea level (amsl). The Project site lies within the Southern Basin and Range physiographic province, an extensional terrain characterized by discontinuous northwest to northeast-trending ranges separated by broad, thick, fault-controlled alluvial basins. The main contributing drainages in the Project area on the west side of the Santa

Rita Mountains generally drain to the north and west, while the drainages on the east side of the Santa Rita Mountains flow to the north and east. A network of small arroyos on the west side flows to the alluvial fan, with most ending in the alluvial fan or forming larger unnamed channels that traditionally flowed to the Santa Cruz River, the main downstream tributary on the west side.

Drainages on the east side of the Santa Rita Mountains, where the Rosemont Pit is located, generally flow northeast. The Rosemont Pit is near the ridge separating the east and west side of the Santa Rita Mountains. The Rosemont Pit is within the Davidson Canyon watershed near the top of the Barrel Canyon Wash. The Barrel Canyon Wash confluences with the Davidson Canyon Wash which then confluences with Cienega Creek to the north and west of the Project site.

Vegetation on the site generally consists of Madrean evergreen woodlands and semi-desert grassland. The evergreen woodlands cover the higher elevation portions of the site and are characterized as trees interspersed with grasses and forbs. The semi-desert grasslands are in the lower elevations and are characterized as open grasslands with widely scattered shrubs and cactuses. Some riparian vegetation is also present along the major washes, although these are not a dominant part of the landscape.

The Hydrological Engineering Center – Hydrological Modeling Software (HEC-HMS) Model that provides the hydrological analysis supporting the SWMP requires the input of physiographic site conditions, including basin surface area, topography, soils, vegetation, and climatological data- precipitation and evapotranspiration. The HEC-HMS method provides fundamental hydrological input to mine facility planning and design by determining the hydrological loss and resulting transformation processes.

Precipitation data from the Helvetia Weather Station (ID No. 23981) was utilized because of Helvetia's representative location on the western slope of the Santa Rita Mountains at a comparable elevation of 4,300 feet amsl. The Helvetia station provides 25 years of continuous precipitation data, which has been supplemented with limited data from the National Oceanic and Atmospheric Administration (NOAA). This precipitation data was used in the HEC-HMS model runs (Piteau-Bowman, 2022). The annual average rainfall for the Project site based on data from the Helvetia Weather Station is 19.73 inches. Using this data, the resulting 100-year, 24-hour design storm event (used for temporary diversion channels and pond designs) is 4.19 inches and the 1,000-year, 24-hour storm event (used for permanent diversion channels) is 5.80 inches (Bowman 2022). More than half of the precipitation recorded at Helvetia and other nearby stations fell during the summer months of July, August, and September. The months with the least recorded precipitation are April, May, and June.

Pan evaporation data obtained from the Nogales 6N Weather Station (ID No. 25924), located at an elevation of 3,560 feet amsl, were determined as the most applicable data (approximately the same elevation) available within a reasonable proximity to the Project site. These data indicate an average annual pan evaporation of 91.20 inches of which the highest evaporation rates (13.31 inches/month) occur in June, with the lowest expected rate (3.59 inches/month) occurring in January.

3.0 Water Balance

The Site-Wide Water Balance (SWWB) considers water consumption, water loss through evaporation and material entrainment, water reclaimed from processing, seepage collection for TSFs, non-contact stormwater, and contact water from the pits. With these considerations, the SWWB is used to predict the water loss volume and estimates the amount of make-up/fresh water needed for operations. Rosemont currently holds a water right for up to 6,000 acre-feet of groundwater for mineral processing purposes. This water right will be the primary water source for start-up of the operation and make-up (fresh) water during the life of the mine. Discussion of individual processes (i.e., sulfide and oxide ore types) and facility water demands follows in the sections below. The SWWB model is provided in Appendix A.

4.0 Site Facilities

The proposed site facility footprints, including the TSFs, HLF, HLP, WRF, and the open pits, will change with time as mining progresses. To account for the changes that occur over time, a series of figures have been generated showing the progression of the facilities and the associated water management facilities.

Water management structures will be categorized by the type of water that is being managed: contact water and non-contact water. Contact water includes process solutions from the oxide and sulfide processing circuits, drainage, and seepage from the TSFs, solution and water within the ponds, precipitation and runoff within the pits, and precipitation that falls within the facility footprints (HLF, TSF, process area, and ponds). Contact water will be collected and recycled for use in the process.

Non-contact water is precipitation and runoff that falls within the property boundary but does not contact a project component except for waste rock. The majority of waste rock produced during mining operations is consider non-acid generating and stormwater runoff from the outer slopes of the WRF will be managed as non-contact water based on Rosemont's waste rock management strategy. Non-contact water will be diverted around the Project facilities and released into a natural drainage, to the extent practicable. Sediment basins will be used to reduce sediment in the stormwater prior to release.

Water loss from evaporation and material entrainment will be made up through the use of fresh water from well fields located northwest of the Project site, pit dewatering with the Satellite pits (if needed), and / or water from pit sumps. Water recovery from pit sumps includes infiltrated groundwater, precipitation, and runoff from surrounding areas. Information related to the amount of fresh water needed for the Rosemont Copper World Project is provided in Appendix A.

Rainfall-runoff estimates have been calculated for the following six scenarios:

- Baseline Conditions (Pre-construction or Year -2),
- Year 1 (Operations),
- Year 5 (Operations),
- Year 10 (Operations),
- Year 15 (Final Configuration), and
- Facility Closure.

4.1 Baseline Condition

Figure 4 shows the topography, drainages, and general water flow direction prior to initiation of construction of the Rosemont Copper World Project. In general, drainages within the Project area on the west side of the Santa Rita Mountains flow to the northwest toward the Santa Cruz River. Drainages within the Project area on the east side of the Santa Rita Mountains flow to the northeast to Barrel Canyon.

4.2 Pits

The Project includes six open pits (one primary pit and five satellite pits) distributed across an approximate three-square mile area in the Rosemont and Helvetia-Rosemont mining districts. The five satellite pits, listed from northwest to southeast as shown on Figure 1, are the Peach, Elgin, Heavy Weight, Copper World, and Broadtop Butte, while the larger Rosemont Pit is located immediately south of the Broadtop Butte Pit. Four of the satellite pits (Peach, Elgin, Heavy Weight, and Copper World) are located on the west side of the Santa Rita Mountains. The Broadtop Butte Pit is located on the divide between the west and east side of the Santa Rita Mountains, and the Rosemont Pit is located wholly on the east side of the Santa Rite Mountains. Due to the Rosemont Pit being located on the east side and within a different hydrologic basin, water management will be handled differently, which is described in more detail below. The highest slopes of the Satellite Pits are approximately 475 to 800 feet high, and the Rosemont Pit has a maximum slope height of

about 2,000 feet. Three of the pits; Heavy Weight, Copper World, and Broadtop Butte, will eventually be backfilled with waste rock

Figures 5 through 10 show the anticipated sequencing of mining from the six pits. The time frames during operation of the pits and the water management strategies associated with pits are described in the following sections. Table 1 provides information for each pit including size, years of operation and the estimated volume of water (precipitation and groundwater) that will be managed. The volume of water provided is based on the final pit configuration, which represents the largest volume of pit water (precipitation and groundwater) that will need to be managed. It is noted that the pits will be in operation at different times. For example, the Peach Pit and Elgin Pit operations will be completed prior to the Rosemont Pit operations.

Table 1: Pit Areas and Modeled Water Input at Final Configuration

Period	Area (acres)	Average Annual Precipitation Volume (acre-feet) *	Average Groundwater Pumping Rates (gpm)
Peach Pit	68.0	111.8	1.5
Elgin Pit	43.3	71.2	2.6
Heavy Weight Pit	39.2	64.5	16.0
Copper World Pit	58.0	95.4	19.0
Broadtop Butte Pit	172.6	283.8	26.0
Rosemont Pit	466.9	767.6	296
Total	848.0	1394.3	

Note: Average annual precipitation = 19.73 inches based on Helvetia Weather Station (Bowman, 2022).

Year -2

Construction of the facilities is anticipated to take two years; thus Year -2 represents the first year of construction. Stripping of overburden and waste rock will occur from the Peach Pit, Elgin Pit and Heavy Weight pits during the two-year pre-mining construction period. Overburden and waste rock from these pits will be used as construction material for roads and HLF.

Year 1

During the first year of operations, mining will continue in the Peach Pit, Elgin Pit and Heavy Weight Pit. Water associated with the pits during the first year of mining will include groundwater inflow collected in the pit sumps, precipitation within the pits, and runoff into the pits. Water from these sources will be collected in sumps constructed at the bottom of each pit. Table 1 provides the estimated volumes of water that will be collected from each pit at final configuration, which will represent the largest volume of water to be managed. The water balance in Appendix A accounts for the increase in precipitation from year to year as the pits increase in size.

Water recovered from the active pits in Year 1 will go into the process circuit, which may be routed to the process ponds (Primary Settling Pond, Reclaim Pond or Raffinate Pond). Water from pit dewatering wells, if needed, could go to the process circuit, to the fresh/fire water tank, or for use for general dust suppression.

Year 5

At Year 5, mining in the Peach and Elgin Pits will have been completed. The Peach and Elgin Pit will be left as open pits and will not be backfilled with waste rock. Water recovery from the Peach and Elgin Pit sumps would continue as needed until operations cease. Mining will continue in the Heavy Weight Pit and mining will have begun in the Copper World Pit (starting in Year 2) and Broadtop Butte Pit (starting in Year 3). In

Year 5, mining will also begin in the Rosemont Pit. Table 1 provides the water input into each pit that will require management at final configuration.

Management of water in the pits will be the same as indicated in Year 1. However, water management for the Rosemont Pit will be altered due to the fact it is in a different hydrologic basin. Water from dewatering wells will be used for dust suppression with excess water released to a natural drainage on the east side of the Santa Rita Mountains. Water that collects in the pit sumps will be used for in-pit dust suppression or pumped to the process circuit.

Year 10

In Year 10, mining will have ceased in the Heavy Weight Pit, Copper World Pit, and Broadtop Butte Pit. The Heavy Weight Pit and Copper World Pit will have been backfilled with waste rock and the Broadtop Butte Pit will be in the process of being backfilled with waste rock. Water that collects in the pits will be allowed to stay in the pit. Near-natural steady-state hydrogeologic conditions are expected to return over time and, as a result, will no longer require pit-influenced water management. Water management activities in the pit areas will only be associated with the waste rock backfill, which is discussed in Section 4.3.

Active mining will occur in the Rosemont Pit from Year 10 to the end of mining. As a result, water management will follow the activities discussed in Year 5 for the Rosemont Pit.

Year 15

No changes in water management associated with the pits from Year 10. Mining and processing will cease in Year 15. Once mining has stopped, groundwater pumping from dewatering wells associated with the Rosemont Pit will cease and other water inputs into the pits will be allowed to stay within the pits. Once water management activities associated with the pits cease, the Peach, Elgin and Rosemont pits will begin to fill with water to create a pit lake. Water will also infiltrate into the backfilled pits.

Closure

Following cessation of mining and processing activities, the Peach, Elgin, and Rosemont Pits will be allowed to fill with water primarily from groundwater inflow. Precipitation and runoff from some surrounding up-gradient areas will also add to the volume of water in the pits. Due to the high evaporation rate, the open pits (Peach, Elgin, and Rosemont) will initially act as groundwater sinks. For the Peach and Elgin pits, net flows will change over time to flow-through conditions. Rosemont Pit will always be a terminal pit lake (sink). A groundwater sink means the rate of evaporation will exceed the groundwater and precipitation inflows; thus, groundwater will continually flow into the pit rather than through the pit. Flow-through indicates that groundwater will move through the pit, which would be towards the northwest for the Elgin and Peach pits.

In summary:

- The Peach and Elgin Pits will ultimately act as flow-through pit lakes. Sustained groundwater outflow is predicted to be on the order of 1-3 gpm – within the margin of error for the groundwater model.
- The Rosemont Pit is predicted to always act as a sink pit lake with evaporation exceeding groundwater inflows and precipitation.
- Backfilled pits are predicted to ultimately act as flow-through. However, the rate of flow is very small and particle simulation shows immeasurable net discharge from pit footprints within 200 years.

4.3 Waste Rock Facility

Haul trucks will be used to transport the waste material, beginning in the pre-production period starting in Year -2. The initial production of waste rock will be placed within the footprint of the HLP and process area

and used for road construction. The current design for the starter dams of TSF-1 and TSF-2 uses local borrow and does not include the use of waste rock. The total volume of waste rock produced during mining operations is estimated at approximately 477 million tons (Mt), 397 Mt from the Rosemont Pit and 80 Mt from the Satellite pits. Through the progression of mining, waste rock will be used to backfill three pits: Heavy Weight, Copper World and Broadtop Butte pits. Figures 5 through 10 provide the sequencing for years -2 (baseline), 1, 5, 10, 15, and closure, respectively.

Year -2

The production of waste rock will begin during Year -2 from the Peach Pit, Elgin Pit and Heavy Weight Pit. Initial waste rock production during the construction period will be used for the base of the HLP, process area and roads. No specific water management measures associated with the waste rock are necessary during the construction period other than for the areas indicated. However, water management measures associated with the TSF and HLF will be required, which are described in Sections 4.5 and 4.6, respectively.

Year 1

As during the first two years of construction, separate waste rock facilities will not be created during the start of mining as the available waste rock from the Peach, Elgin and Heavy Weight Pits will be used for construction of the leach pad base, for road construction, and other construction activities. No specific water management measures are necessary during the Year 1 of operations other than for the areas indicated.

Year 5

The placement of waste rock in the HLP footprint continues through Year 5 including construction of additional roads. However, starting in Year 4, a separate WRF area will be started to the west of the Heavy Weight Pit. Waste rock in this area will continue through Year 5 and will primarily be from the Peach Pit and Heavy Weight Pit.

During initial development of the WRF, the upgradient exterior toe of the WRF will be set back from the basin divide by approximately 100 feet so that runoff from the sloped areas will infiltrate back into the waste rock or flow into the pits (Figure 11). The main WRF area will be constructed with a slight grade to promote runoff from the top and benches and the compacted surface (by vehicle traffic) will also promote runoff. To the extent practical through grading of the top and benches, runoff will be conveyed to low points in the natural topography adjacent to the waste rock. During Year 5, the small amount of runoff from the initial main WRF area will flow into the Elgin Pit and be recovered as discussed in Section 4.2.

Year 10

By Year 10, waste rock will be used to backfill both the Heavy Weight Pit and Copper World Pit. Waste rock used to backfill these pits will come primarily from the Rosemont Pit and Broadtop Butte Pit. Mining in the Heavy Weight and Copper World pits ends in Year 7 with waste rock backfill starting immediately after that point. By Year 10 most of these two pits will have been backfilled. The northern portion of the Broadtop Butte Pit will also be completed by Year 7. In Year 10, additional waste rock is planned for all currently active waste rock areas, thus reclamation will not have begun. Figure 8 shows the status of the waste rock as of Year 10.

To the extent possible, placement of the waste rock and limited grading will promote runoff into the existing pits or by surface flow via benches to a low point in the topography, where runoff and seepage will be collected in a temporary or permanent WRF sediment basins. WRF sediment basins will be located at these low points to capture runoff and allow settling of suspended solids prior to release of the stormwater to the natural drainages. Due to the evolving shape of the WRF, some sediment basins would be temporary

until the final configuration of the WRF is completed. Once sections of the WRF are completed, permanent sediment basins would be constructed. Figure 8 shows the anticipated temporary and permanent sediment basins through Year 10.

Year 15

By the end of Year 15, mining will cease in the Rosemont Pit and WRF construction will be completed. The Copper World Pit and Broadtop Butte Pit will be completely backfilled. Water management associated with active portions of the WRF, including waste rock in the Copper World Pit and Broadtop Butte Pit areas, will be managed as described in Year 5 and Year 10.

Reclamation of the WRF will begin once mining in the Rosemont Pit is completed. Some concurrent reclamation during operations may be possible on the northern portion of the WRF. Reclamation will include grading the surface, ripping to loosen the compacted surface, and seeding. Grading on the south portion of the waste rock over the Broadtop Butte Pit will be to promote runoff into the Rosemont Pit to the extent possible. Other portions of the waste rock will be graded to promote flow to the low points along the toe of the facility where WRF sediment basins will be located. Following grading, the surface will be ripped in preparation of seeding with a native seed mix.

At low points along the toe of the WRF, permanent sediment basins will be constructed to handle runoff from the waste rock. These basins will be designed to handle the flow from a 10-year, 24-hour storm event. The basins will be designed to allow sufficient retention time to allow suspended sediment to settle prior to releasing the water to a natural drainage. Figure 9 shows the configuration of the WRF and sediment basins at Year 15.

In summary, and consistent with groundwater modeling considerations in support of surface water management and design, backfilled pits (Heavy Weight, Copper World, and Broadtop Butte) will receive only recharge from groundwater inflow and potential infiltration from precipitation. For the Peach and Elgin pits, all catchment water will be routed away from the pits with only groundwater inflow and precipitation available to pit recharge. Finally, recharge to Rosemont Pit is expected resulting from groundwater inflow, precipitation, and catchment runoff.

Closure

Reclamation will begin on the WRF as soon as practicable as described in the previous sections. Figure 10 shows the locations for the WRF sediment basins associated with the WRF at closure. Reclamation of the WRF and other Project areas is expected to be completed within two years of cessation of mining. Post-closure monitoring of the reclamation will be conducted for a period of 5 years following completion of reclamation of the WRF (and other areas) and will focus on erosion issues and vegetation success. Stormwater monitoring will be conducted per the requirements of the Arizona Pollutant Discharge and Elimination System (AZDPES) stormwater program.

4.4 Process Area

Figure 1 shows the location of the processing facilities. Construction of the processing area will begin in Year -2 and completed within two years, with processing of ore beginning in operational Year 1. The primary facilities associated with the processing area include the crusher system, flotation circuit, concentrate leach, acid plant, SX-EW circuit, and the process area ponds (Raffinate, Reclaim, and Process Area Stormwater).

The plant site's operational and maintenance facilities are designed, and will be constructed, to capture process solution and runoff that contacts processing facilities. Typical design components such as concrete-floored buildings with curbs and concrete sumps will ensure the facilities solution is captured and sent to one of the three process areas ponds for storage and recycled in the process circuit.

Facilities located within the plant site area will be protected from stormwater run-on as the facilities will be constructed on elevated pads consisting of placed (engineer-controlled) fill. If necessary, channels may be constructed along the toe of the elevated pads to route stormwater along the toe into the natural drainages. Precipitation that falls directly on the plant site will be collected in conveyance channels and routed to the Process Area Stormwater Pond located west of the plant site (Figure 1). Runoff reporting to the stormwater pond will be treated as contact water and recycled into the process water circuit.

The Reclaim Pond will be used to store reclaimed water from the flotation process and filtering system used in making the copper concentrate. Water needed to supplement the flotation circuit will be provided from the Primary Settling Pond or from the freshwater distribution system. The Raffinate Pond will contain solution recovered from the SX-EW process. This solution will be reconditioned by lowering the pH with the addition of sulfuric acid and then recycled to the heap leach. Make-up water to this circuit will come from fresh water sources.

Once constructed and in operation, water management systems installed during the initial construction will remain in place throughout the life of the mine. Facilities will be removed during closure activities or will be used in closure activities, such as some of the HLF ponds.

4.5 Tailings Facilities

TSFs are designed to store the waste material from the flotation circuit. Two TSFs (TSF-1 and TSF-2) are planned to be constructed and operated throughout the life of the Project. The TSFs are designed to capture as much solution as possible and recycle the solution back to process. Solution recovered during the flotation and copper concentrate circuits will be sent to the Reclaim Pond located west of the process area. Solution recovered from the TSFs will be sent the Primary Settling Pond, located northwest of the Process Area ponds. Water stored in the Primary Setting Pond will be recycled into the process circuit. Locations of the TSF-1, TSF-2 and the Primary Setting Pond are shown on Figure 1.

Precipitation that falls within the facility will become part of the fluid that is captured in the decant pond or in the seepage collection system. Precipitation that falls on the outer slopes of the TSF embankments and runoff will be captured by a collection channel along the toe of the embankment. This runoff collection channel will convey water to seepage collection trenches and pumped to the Primary Settling Pond for use in the sulfide ore processing circuit.

Seepage from the TSF will be collected in the seepage collection system and reused in the process circuit. The primary portion of the seepage collection system includes a series of perforated pipes at the tailings / prepared subbase interface (Figure 1). These perforated pipes will collect seepage from the tailings and convey the seepage to one of several seepage collection trenches. The seepage collection trenches are the other component of the seepage collection system. The seepage collection trenches will be located at topographic low points on the downgradient side of the TSFs. Figure 9 provides the locations of the seepage collection trenches associated with both TSFs. Figure 12 provides a plan view of TSF-1 showing the under-drain collection piping, location of seepage collection trenches and associated piping (seepage collection piping) and location of stormwater collection galleries and associated piping. Figures 13 and 14 provide cross sections of a typical seepage collection trench.

In addition to collecting solution from the seepage collection system, solution that bypasses the seepage collection piping and flows through the alluvium will be captured by the seepage collection trenches. Each trench will be excavated to bedrock to ensure capture of seepage within the alluvium. Solution collected in the seepage collection trenches will be pumped to the Primary Settling Pond for reuse in the process circuit. From modeling, it is anticipated that approximately 2% of the seepage from the tailings would bypass the collection systems and move through the alluvium and into the bedrock.

The final method of collecting solution from the TSF is from a pool on the surface of each TSF cell. The deposition of the tailings within the facility will be controlled to create a beach leading to a decant pool. A floating barge with a pump will be used to pump pooled water from the top of the facility to the Primary Settling Pond.

This solution collection system for the TSFs will be operated throughout the life of the mine and into closure. As the TSFs increase in size through operations, the seepage collection piping and the number of seepage collection trenches will increase. The seepage collection system has been designed to collect seepage from the TSFs including precipitation from a 100-year, 24-hour event. Table 2 provides the yearly TSF size in acres with the average annual precipitation inputs. Expansion of the TSF and solution collection systems are provided on Figures 5 through 10 and described in the following sections.

Table 2: TSF Area and Precipitation Input

Year	Area Associated with Tailings (acres)			Average Annual Precipitation Volume (acre-feet) ²
	TSF-1 ¹	TSF-2	TSF Total	
1	348		348	572.2
2	390		390	641.2
3	431		431	708.6
4	473		473	777.6
5	577		577	948.6
6	622		622	1022.6
7	667		667	1096.5
8	712		712	1170.5
9	757		757	1244.5
10	802	135	938	1542.1
11	946	173	1119	1739.4
12	946	211	1157	1800.2
13	946	249	1195	1862.7
14	946	287	1233	1925.1
15	946	307	1253	1956.4

¹Area associated the full F-block private land.

² Average annual precipitation = 19.73 based data from the Helvetia Weather Station (Bowman, 2022).

Year -2

The construction of the starter dam for Cell 1 and Cell 2 of TSF 1 will begin during the two-year construction phase of the Project. During this timeframe, stormwater management will be required prior to the start of TSF construction and throughout the life of the facility. Prior to construction of the starter dam, stormwater collection galleries and stormwater diversions will be installed around Cells 1 and 2 of TSF-1.

The first step will be to construct stormwater diversions and stormwater collection galleries. The stormwater diversions will convey water either to a natural drainage or to an upgradient stormwater collection gallery. The upgradient stormwater collection galleries (Figure 15 and Figure 16) will be used to collect surface flow and shallow alluvial flow from upgradient of the facility. The non-contact stormwater will be conveyed in a solid pipe under the TSF from the upstream gallery to the downgradient stormwater collection gallery (Figures 17 and 18). The stormwater collection gallery and piping will be sized to manage runoff from a 1,000-year, 24-hour storm event. Figure 5 shows the locations of the upstream and downstream stormwater collection galleries constructed prior to TSF-1 construction. Between Year -2 and Year 1, one upstream stormwater collection gallery and three downstream stormwater collection galleries will be constructed.

To ensure the stormwater and seepage from the TSF are not mixed in the stormwater collection galleries, the stormwater collection gallery side that is adjacent to the TSF in both the upstream and downstream galleries will be lined with an 80-mil geomembrane or other barrier material. Inflow into the upstream stormwater collection gallery will be from the diversion channels, from natural channels, and from shallow alluvial flow, which will flow through a geotextile fabric and into the gallery. The collected stormwater will be conveyed under the TSF to the downstream stormwater collection gallery, where the flow will infiltrate into the alluvium or overflow into an existing drainage.

Once the stormwater collection galleries are constructed, four diversion channels (DC1, DC2 and DC3 and TDC1) will be constructed prior to the start of operations. Diversion Channel 1 (DC1) will be constructed along the east edge of Cell 1 to divert stormwater from the east and discharge it directly to the north into a natural drainage (Figure 5). Diversion Channel 2 (DC2) will be constructed along the southeast edge of TSF-1 Cell 1 (Figure 5). This diversion channel will collect stormwater flow from southeast of the TSF-1 Cell 1 and divert it to the stormwater collection gallery in the southeast corner of TSF-1 Cell 1 (Figure 5). Diversion Channel 3 (DC3) will be constructed along the east edge of TSF-1, Cell 2 and convey the stormwater to a natural drainage that flows to the upstream stormwater collection gallery in the southeast corner of TSF-1 Cell 1.

Temporary Diversion Channel (TDC1) will be constructed along the southern edge of the TSF-1 Cell 2. TDC1 will collect stormwater flow from south of TSF-1 Cell 2 and discharge to the natural drainage to the west of TSF-1 (Figure 5). Once diversions DC1, DC2 and DC3 and TDC1 are in place and stormwater flow upgradient is collected and diverted around the construction area, construction of Cell 1 and Cell 2 of TSF-1 will begin.

The first phase of construction for TSF-1 Cell 1 and Cell 2 will include the installation of the seepage collection system under the TSF, and construction of the seepage collection trenches along the downstream side of TSF-1. Discussion of the seepage collection system is described in the Year 1 section.

Year 1

As part of the development of TSF-1 during operations, the seepage collection system under the TSF cells and four seepage collection trenches will be installed. The seepage collection piping and seepage collection trenches will ensure seepage from the tailings is contained and recycled back to the processing circuit. For the purposes of this SWMP, it is interpreted that these seepage collection and management systems will be constructed and operational and as such are shown on Figure 6 which represents conditions from Day 1 of operational Year 1.

The seepage collection system, shown on Figure 6, is a herring-bone layout of slotted pipes that collect seepage from the tailings and convey the seepage from the slotted pipe to a solid spine drain that conveys the seepage to the seepage collection trench. From the seepage collection trench the seepage is pumped to the Primary Settling Pond where it is recycled back into the process circuit.

Figures 13 and 14 provide sections through the seepage collection trenches, which will be constructed to bedrock to collect seepage that bypasses the seepage collection system. The downstream edge and bottom of the trenches will be lined with 80-mil geomembrane to prevent release of seepage from the trench. A pump will be placed in a slotted HDPE pipe within the trench. The pump will be used to pump water to the Primary Settling Pond.

At the start of operations, Cell 1 and Cell 2 of TSF-1 will be used for tailings deposition. Figure 6 shows the locations of the starter dams for each cell at the start of processing.

Surface water will be managed through the use of the existing diversion channels discussed in the Year -2 section that have been designed and constructed to convey runoff from the 1,000-year, 24-hour storm event. These diversion channels will either route non-contact stormwater directly to an existing channel or

stormwater will be collected in the east side stormwater collection gallery. Non-contact water that is collected in the stormwater collection gallery will be conveyed under the TSF 1 in a solid pipe to one or more of the downstream stormwater collection galleries. Water conveyed to the downstream stormwater collection galleries will be released to a natural drainage.

Once operations begin, including deposition of tailings in TSF-1 Cells 1 and 2, seepage from the tailings will be collected in seepage collection system, conveyed to seepage collection trenches, and pumped to the Primary Settling Pond as described above.

Year 5

By Year 5, the three cells associated TSF-1 will have been constructed and in use. Prior to the construction of Cell 3, the diversion TDC1 will be removed and two permanent diversion channels, Diversion Channel 4 (DC4) and Diversion Channel 5 (DC5), will be constructed. DC4 will collect stormwater flow from south of TSF-1 Cell 3 and convey the stormwater to a natural drainage on the east side of TSF-1 as shown on Figure 7. Diversion DC5 will be constructed to capture stormwater runoff from a small area west of Peach Pit and convey water to an upstream stormwater collection gallery on the east side of TSF-1 Cell 3. The non-contact water in this upstream stormwater collection gallery will be conveyed under the TSF-1 Cell 3 to a downstream stormwater collection gallery then into DC4 and ultimately to a natural drainage.

Solution management in TSF-1 Cell 3 will be the same as that used in Cells 1 and 2. The seepage collection piping will collect seepage from the tailings and convey the seepage to one of three seepage collection trenches on the west side of TSF-1 Cell 3 (Figure 7). Seepage that bypasses the seepage collection piping will be collected in the seepage collection trenches. Solution in the seepage collection trenches will be pumped to the Primary Settling Pond for reuse in the processing circuit. It is anticipated that some seepage from the tailings would bypass the collection systems and move through the alluvium and into the bedrock.

Year 10

By Year 10, TSF-2 will have been constructed and in operation. TSF-2 will be constructed with two cells. A seepage collection system consists of a perforated pipe network at the tailings/subbase interface and seepage collection trenches, similar to TSF-1. Three seepage collection trenches will be constructed on the west side (Figure 8) to collect solution from the perforated pipe network and seepage in the alluvium that bypasses the perforated pipe network. Solution that is collected will be pumped to the Primary Settling Pond for reuse in the processing circuit. It is anticipated that some seepage from the tailings would bypass the collection systems and move through the alluvium and into the bedrock.

Stormwater will be collected in the Diversion Channel 6 (DC6) that will be constructed in Year -2 along the south side of TSF-2. Construction of DC6 is associated with the HLF, which is described in Section 4.6. This diversion channel will convey the stormwater to a natural drainage on the west side of TSF-2.

Year 15

The systems installed through Year 10 will continue to operate through Year 15 and to the end of mining and processing.

Closure

Following cessation of sulfide ore processing in Year 15, the two TSFs will continue to draindown with solution management focused on reducing the volume of entrained water within the facilities. Closure activities will include managing the draindown through enhanced evaporation (estimated 30 years), limited grading of the facility once the surface is competent enough for equipment, covering with a growth media,

seeding, and converting the seepage collection trenches to sulfate reducing treatment cells for long-term management of seepage.

Enhanced evaporation generally consists of pumping the solution to the top of the facility and atomizing the solution through snowmakers or similar devices. This increases the surface area of the water allowing greater evaporation. Once solution draindown rates decrease to a point where passive treatment can be used (estimated to be 30 years after cessation of tailings deposition), conversion of the seepage collection trenches to sulfate reducing treatment cells will take place.

Initial analysis indicates that sulfate and total dissolved solids of the tailings seepage water will exceed the Environmental Protection Agency (EPA) Maximum Contaminant Levels (MCL). The seepage collection trenches would be converted to passive treatment cells to reduce sulfate and total dissolved solids (TDS), thus allowing the treated water to be infiltrated into the ground, downgradient of the TSFs. The seepage collection trenches will operate as designed until seepage from the TSF can be managed through the sulfate reducing treatment cell and ultimately allowed to infiltrate in the ground. Conversion of the trenches to treatment cells is anticipated to occur 30 years after cessation of operations. Testing during operations will be used to determine when conversion of the trenches can occur. Figure 19 provides a schematic of a typical sulfate reducing treatment cell.

In addition to managing the seepage, precipitation and runoff will be managed by grading the surface of the TSFs to promote runoff and limit infiltration. A growth media cover will be placed to hold water for vegetation use and minimize infiltration. TSF stormwater runoff channels will be constructed at the approximate locations shown on Figure 10. These channels will convey stormwater runoff that gathers in the TSF decant pool areas, through a breach in the embankment, down the embankment slope and into an existing natural drainage. Closure of the TSFs is anticipated to be completed approximately 30 years after cessation of operations when pumping ceases and passive treatment of the seepage is managed in the converted sulfate reducing treatment cells.

Stormwater runoff from the reclaimed slopes of the TSF embankments will be conveyed to perimeter diversion channel and released into a natural drainage.

4.6 Heap Leach Facility

The HLP will be located south and east of the processing area as shown on Figure 1. The HLP will be constructed in three phases within the first five years of operation. The HLP will be constructed with a composite liner system, which is described in this section.

The HLP is proposed to be divided into three cells which will be constructed on compacted (engineer-controlled) waste rock to create a drainage pattern to the centerline of the pad and then toward the west where the HLF ponds are located. Solution within the HLP will be contained using a composite liner system. The liner system will consist of a prepared subgrade over waste rock or other imported material. The sub-base is overlain by a geosynthetic clay liner (GCL). An 80-mil double-textured linear low-density polyethylene (LLDPE) liner will be placed over the GCL. The LLDPE liner will be covered with an over-liner of three feet of well-draining material. Perforated solution collection piping will be placed directly on the liner and covered with the over-liner material. This piping will be used to collect solution and convey the solution to the PLS Pond, thus minimizing hydraulic head on the liner system.

There are two separate underdrain systems associated with the HLF. The underdrain/seepage cutoff trench is under the HLP at the downstream edge to intercept solution that may leak from the liner system or shallow alluvial flow directly under the liner system. This underdrain consists of a perforated pipe that transitions to a solid pipe that conveys the water to the PLS pond. There is also an underdrain system on the ponds associated with the HLP. These underdrains report to the individual pond sumps. This underdrain system is

to prevent seepage or shallow alluvial flow from collecting under the liner of the ponds and causing a “ballooning effect” on the geomembrane.

The HLP facility will operate by placing agglomerated and/or run-of-mine ore on HLP. Leaching will begin once a layer of ore is placed on the HLP. A dilute sulfuric acid solution will be pumped to the HLP and dispersed through a series of small diameter pipes and drip emitters. The solution from the emitters will saturate and drain through the ore while dissolving the copper minerals. The solution will migrate through the ore and be collected in the collection pipes or conveyed along the liner to the main collector pipe. The main collector pipe will convey the solution to the PLS Pond. From the PLS Pond, the solution is piped to the SX/EW plant for copper recovery.

The HLF ponds will include a PLS Pond and two stormwater ponds. The PLS Pond will have a double-lined system with a leak collection and recovery system (LCRS). The two stormwater ponds will be single-lined and will only contain stormwater or process water (under upset conditions) for a short period of time. Piping associated with the HLF will either be double-walled pipe (pipe within a pipe) or a pipe within a lined trench.

Year -2

Construction of Cell 1 of the HLP facility will begin in Year -2 with the placement of waste rock as a base for the HLP. Prior to placement of the waste rock in the HLP area, two permanent diversion channels, Diversion Channel 6 (DC6) and Diversion Channel 7 (DC7), will be constructed south of the HLP facility as shown on Figure 5. These diversions will be used to convey flow from two natural drainages southeast of the HLP that flow directly through the location of Cell 1 of the HLP. DC6, as shown on Figure 5, would divert and convey this flow to the west along the southern border of the future TSF-2. DC6 will then convey the stormwater to the south of the HLF ponds and flow into a natural drainage as shown on Figure 5. During construction and through the first 10 years of operation, DD6 will divert stormwater flow around Cell 1 of the HLP. In later years, this diversion will also divert stormwater flow around TSF-2.

DC7 will be constructed on the east side of the future Cell 2 of the HLP and on the east side of the future TSF-2. This diversion will be used to capture runoff from the topographic knob south of the HLP and east of TSF-2 as shown on Figure 5. Stormwater in this diversion channel will be conveyed to a natural drainage east of HLP Cell 1.

Year 1

During Year 1, agglomerated and/or run-of-mine oxide ore will be placed on the HLP. Leaching will begin once the SX-EW processing facility is operational. Solution within the heap and SX-EW circuit will be managed as described above. Precipitation that falls directly on the HLF footprint will be incorporated into the processing circuit. The precipitation addition to the heap leach process solution inventory will increase as the HLP size increases. Table 3 provides the yearly progression of the HLP, and the associated precipitation input to solution from precipitation.

Table 3: Heap Leach Area per Year and Precipitation Contribution

Period	Area (ac) ¹	Average Annual Precipitation Volume (acre-feet) ²
0	0	0
1	100	164.4
2	156	256.5
3	188	309.1
4	218	358.4
5	252	414.3
6	272	447.2
7	272	447.2

Period	Area (ac) ¹	Average Annual Precipitation Volume (acre-feet) ²
8	272	447.2
9	336	471.8
10	336	471.8
15	336	471.8

¹Area associated with the full heap leach facility.

²Average annual precipitation = 19.73 inches based on data from Helvetia Weather Station (Bowman, 2022).

Surface water or stormwater management structures around the HLP in Year 1, which were constructed between Year -2 and Year 1, are shown on Figure 6. The primary structure for management of stormwater flow around the HLP will be DC6 and DC7 as described in the Year -2 section. Stormwater flow to the east of Cell 1 would be allowed to flow in the natural drainage until future cells are constructed.

Year 5

By Year 5, the three HLP cells will have been constructed and in operation. Cell 2 is constructed in Year 2 and goes into operation in Year 3. Cell 3 is constructed in Years 4 and 5 with operation starting in Year 6. Solution management of the HLP will be the same throughout the life of the HLP.

Surface water management, needed for the construction of Cells 2 and 3, will include the construction of two additional diversion channels (DC8 and DC9). DC8 will be constructed along the south edge of Cell 3 to collect flow from two drainages that flow north through the HLP Cell 3 area (Figure 7). DC8 will convey water to a stormwater collection gallery located at the terminus of DC7, as shown on Figure 7, then through a pipe under the HLP to an existing natural drainage, as shown on Figure 7. DC7 will be reconfigured to convey water into the same stormwater collection gallery. A description of the stormwater collection galleries is provided in Section 4.5, under the Year -2 description for the TSFs.

The pipeline under the HLP will be surrounded with clean gravel and designed to convey a 1,000-year, 24-hour storm event. The pipe will be a 36-inch high-density polyethylene (HDPE) solid pipe. Both the pipe and gravel will be used to convey the design storm event. The pipe and gravel will empty into another gallery on the north side of the HLP as shown on Figure 7. The downstream stormwater collection gallery will be used to slow flow, allow sediment to drop out and then discharge the stormwater to the existing natural drainage and alluvium. Figures 17 and 18 provide cross sections of the downstream stormwater collection gallery.

Additionally, two diversions (DC7 and DC8) on the southern portion of the HLP and a third diversion (DC9) will be constructed to route an existing natural drainage originating to the east of the HLP Cell 3. This drainage will be covered with waste rock during operations. Runoff from the waste rock will be captured in a WRF sediment basin to allow settling of sediment prior to release. Flow from the basin and other runoff will be captured in DC9 and conveyed around the HLP to a natural drainage to the north of the HLP (Figure 7).

Year 10

Year 9 will be the last year of oxide ore placement on the HLP. Leaching of the ore with dilute sulfuric solution will continue until it is no longer economic to recover copper from the solution. This is estimated to be from 6 to 12 months after the final ore is placed on the HLP. Once leaching has ceased, the facility will go into closure, which is described in the following section. No changes to the surface water management will occur during this period nor during closure activities.

Closure (Year 10 through Year 15)

Following cessation of leaching operations in Year 10, the heap leach will continue to drain down with solution management focused on reducing the volume of entrained solution. Closure of the HLF will begin immediately following cessation of leaching (Year 10). Closure activities will include managing the drain-down through enhanced evaporation, limited grading of the facility, and covering the facility with a growth media and seeding.

Enhanced evaporation generally consists of pumping the solution to the top of the HLP and atomizing the solution through a snowmaker or similar device. This increases the surface area of the water allowing greater evaporation. Once solution draindown rates decrease to a point where passive evaporation can be used (estimated to be 8 years after active leaching stops), the PLS Pond and HLF North Stormwater Pond will be converted to evaporation cells. The HLF South Stormwater Pond will be closed and reclaimed per prescriptive BADCT methods. The top surface and slopes of the leach pad will be graded to promote runoff and limit infiltration. Runoff from the reclaimed heap leach will be captured in the diversion channels and routed to a natural drainage. A growth media cover will be placed to hold water for vegetation use and minimize infiltration. Closure of the HLF is anticipated to be complete in Year 18.

4.7 Summary of Stormwater Management Structures

4.7.1 Diversions

Rosemont intends to release non-contact stormwater downgradient of the facilities via a system of designed diversion channels. Construction of surface water control structures will be started during the initial construction of the Project (Year -2) with the permanent diversion channels completed by Year 5 of operations. After Year 5, the planned diversion structures will be in place for the life of the operation and post-closure. The locations and progression of the nine diversions are shown on Figures 5 through 10. These diversions will be constructed to handle runoff from the 1,000-year, 24-hour storm event. The one temporary diversion channel (TDC-1) will be used during the first two years of operation and will be designed to convey the 100-year, 24-hour storm event. Table 4 provides peak flow for design of each of the diversion channels.

Table 4: Diversion Channel Summary - Volumes

Diversion	Location/Description	1000-year event flow (cfs) ¹
DC1	East side of Cell 1, TSF-1	1101.2
DC2	South side of Cell 1, TSF-1	2,174.9
DC3	East side of Cell 2, TSF-1	1,685.4
DC4	West side of Cell 3, TSF-1	115.3
DC5	East side of Cell 3, TSF-1	464.2
DC6	South and west side of TSF-2	2,897.8
DC7	East side of Cell 2, TSF-2 and south side of Cell 3, HLF	2,197.7
DC8	Southeast side of HLF	1,635.3
DC9	North side of Cell 3 of HLF	228.0
TDC-11	South side of Cell2 of TSF-1	176.3 ²

¹1000-year event flow data based on Bowman (2022)

²100-year event for temporary diversion channel based on Bowman (2022)

4.7.2 Stormwater Collection Galleries

Three upgradient and five downgradient stormwater collection galleries are planned for the Project as shown on Figures 7 through 10. A description of the stormwater galleries is provided in Section 4.5 with typical cross sections provided on Figures 15 through 18. These galleries allow for the collection of non-contact stormwater in areas where runoff cannot be diverted around planned facilities. The galleries, along with connected piping, are to be used to safely pass non-contact stormwater under planned facilities and release the stormwater to the alluvium or overflow into natural drainages. These galleries are anticipated to be constructed to collect and manage stormwater runoff located around the TSF-1 and HLF facilities. The locations and progression of the stormwater collection galleries are shown on Figures 5 through 10. Figures 15 and 16 show cross sections of a typical upstream stormwater collection gallery and Figures 17 and 18 show cross sections of a typical downstream stormwater collection gallery. Figures 20 and 21 provide a plan view of Cell 1 of TSF-1 showing the approximate location of the seepage collection trenches and stormwater collection galleries. Figure 22 provide two cross sections (not to scale) through Cell 1 of TSF showing the position of the seepage collection trenches and stormwater collection galleries (upgradient and downgradient).

4.8 Ponds

There are several ponds associated with process solution and stormwater. Table 5 provides sizing information associated with each lined pond. Further details are provided in the following sections.

Table 5: Pond Sizes and Volumes

Pond Name	Length (ft)	Width (ft)	Surface Area (ac)	Depth (ft)	Volume (gal)
HLF North Stormwater Pond	442	300	3.04	24	16,271,029
HLF South Stormwater Pond	442	300	3.04	24	16,271,029
PLS Pond	465	300	3.2	24	16,271,837
Raffinate Pond	300	280 (triangular-shaped)	1.5	24	5,930,496
Reclaim Pond	300	215	1.48	24	5,960,081
Process Area Stormwater Pond	270	270 (diamond-shaped)	1.49	24	6,126,007
Primary Settling Pond (main cell)	400	400	4.0	20	17,473,986
Primary Settling Pond (thickener cell)	400	150	1.7	12	3,723,391

4.8.1 Primary Settling Pond

The Primary Settling Pond will be constructed west of the plant site as shown on Figure 1. This pond will be used for storage of water reclaimed from both TSFs and will also have a separate cell to contain the volume of the tailings thickener in the event of an upset condition. The pond has been sized to contain 24 hours (i.e. pump failure) of solution draindown from the TSFs and the precipitation from a 100-year storm event. Table 5 provides the pond size and volume. A separate cell will be used to contain the contents of the tailings thickener in the event of upset conditions that requires the thickener to be emptied. In the event the thickener contents are emptied into the cell, a clean-out ramp is included that can be used to allow equipment access to remove the solids. The cell for the thickener material will have a 3-foot protective layer over the primary liner to allow rubber-tired equipment to access the pond without damaging the liner. A spillway between the cells will be constructed to allow greater storage capacity of process solutions, if

needed, during operations. This pond will have a similar underdrain system as described in Section 4.6 for the HLP.

The pond liner system will include a GCL over a prepared subgrade. An 80-mil HDPE liner will be placed on the GCL. A geogrid will be placed on the HDPE liner as part of the Leak Collection and Recovery System (LCRS). An 80-mil HDPE liner will be placed over the geogrid. The bottom of the pond will be sloped so leakage through the upper liner collects at a sump where the solution can be detected and removed.

Precipitation that falls within this pond and other ponds will become a source of water for use within the processing circuits. Precipitation that falls on the outer embankments of the pond will be collected in diversion channels around the ponds and will be released in natural drainages. The Primary Settling Pond will continue to be used to collect seepage from the TSFs through operations and approximately 30 years after processing has ceased. Seepage collected in the pond during closure will be recirculated to the TSFs and actively evaporated to reduce seepage volume. Once the seepage volume from the TSFs can be passively treated with the sulfate reducing treatment cells, the Primary Settling Basin will be closed and reclaimed per the prescriptive BADCT methods.

4.8.2 Heap Leach Facility Ponds

Three ponds will be constructed in conjunction with the HLP, which include the PLS Pond, and two stormwater ponds (HLF North Stormwater Pond and HLF South Stormwater Pond), shown on Figure 1. The PLS Pond will have the same liner system as the Primary Settling Pond, system including a LCRS. The two stormwater ponds will be single lined since these will primarily be for stormwater and / or contain process solution for a short period of time during upset conditions. Single-lined ponds will have a prepared subgrade overlain by a GCL. An 80-mil HDPE will be placed on the GCL as the primary liner.

The PLS Ponds have been designed to contain 24 hours of draindown from the HLP in the event of pump failure, and the precipitation from 100-year, 24-hour storm event that falls on the PLS Pond and HLP. Spillways will be constructed to each of the stormwater ponds from the PLS Pond for emergency, short-term storage of process solution. These ponds will have an underdrain system as described in Section 4.6 for the HLP.

Stormwater diversions are not needed for the HLF ponds as they will have embankments above the surrounding topography and the TSF-2 is immediately upgradient. At closure, the PLS Pond and HLF North Stormwater Pond will be converted to evaporation cells to manage long-term draindown from the HLP. The PLS Pond and HLF North Stormwater Pond will be converted to evaporation cells approximately eight years after leaching is completed. The HLF South Stormwater Pond will be reclaimed per the prescriptive BADCT methods at the same time the other ponds are converted to evaporation cells.

The Raffinate Pond is described in Section 4.8.3.

4.8.3 Process Area Ponds

Three ponds, consisting of Reclaim, Raffinate and Process Area Stormwater ponds, will be constructed west of the processing facilities (Figure 1) to contain process solution and stormwater runoff. The Reclaim Pond will be used to store solution recovered from the flotation and concentrate production processes. This pond will have a double-lined system with an LCRS that is the same for other ponds containing process solution. Solution in this pond will be reused in the flotation process for sulfide ore.

The Raffinate Pond will contain solution from the SX-EW process after recovery of the copper in the solution. Solution in this pond will be reconditioned by adding sulfuric acid to reduce the pH to the required level and additional fresh make-up water for use on the HLP. Once reconditioned, this solution will be recycled

back to the HLP. This pond will have a double-lined system with an LCRS that is the same for other ponds containing process solution.

The Process Area Stormwater Pond will be used to contain stormwater runoff that falls within the Process Area. This water will be considered contact water and will be used to provide make-up water for the either the sulfide ore processing circuit (flotation) or oxide ore processing circuit (HLF and SX-EW) throughout the life of the mine. The Process Area Stormwater Pond will be single lined since the pond will contain contact water for only short periods of time.

The process ponds will be reclaimed following decommissioning and demolition of the process facilities. The ponds will be left in place during the demolition of the processing facilities to contain stormwater from the area. Once the processing area has been reclaimed, the ponds will also be reclaimed.

4.9 Roads

There will be numerous roads that will be located throughout the Project site including haul roads and access roads. The primary access road to the Project is the existing Santa Rita Road from Sahuarita, Arizona. The Santa Rita Road bisects the northern portion of the Project through the proposed TSF-1 and ends at the Imerys Quarry.

Haul roads will primarily be in and around the pits, around the WRF, to the crusher, and to the vehicle maintenance facility. Transportation of ore to the leach pad from the crusher and agglomerator will be via conveyor belts. Run-of-mine ore will be transported by haul trucks directly to the leach pad.

A number of access roads will be constructed to allow light vehicle access to the different facilities throughout the Project area, including both TSFs, HLP, ponds, process area, and other ancillary facilities. Both access roads and haul roads will be constructed with erosion protection BMPs such as berms, water bars, collection ditches and sediments basins to minimize and control sedimentation in stormwater runoff. Location of these BMPs will be determined during final design of the facilities. Where temporary roads cross natural drainages or diversion channels, culverts will be installed to pass the design flow from the 100-year, 24-hour event, which is the design storm during operations. Where permanent roads cross natural drainages or diversion channels, culverts will be installed to pass the design flow from the 1,000-year, 24-hour event, which is the design storm for closure.

5.0 Hydrologic Methodology and Design

Bowman Consulting Group (Bowman) and Piteau Associates (Piteau) conducted surface water hydrology studies to predict peak and total volume flow for baseline and mine facility configurations. Included in these studies were the delineation of drainage basins across the Project area that also contributed to the determination of Points of Concentration (PC, i.e., points of off-site surface water discharges). Study results were then utilized in site water management planning which included seepage and infiltration estimates, water balance calculations, and locating and sizing control structures such as ponds and diversion channels.

5.1 Methodology

Bowman employed the HEC-HMS hydrological analysis methodology, a product of the US Army Corps of Engineers, that provides results approximating real conditions that are widely accepted by regulatory agencies. The hydrological runoff methodology used within HEC-HMS is the one developed by the Soil Conservation Service (SCS), which assigns a curve number (CN) to different surfaces given the site-specific nature of the soil and physiographic conditions (e.g., climate, topography, soils, vegetation, etc.). This method provides the basis for determining hydrological loss and transformation processes.

The Helvetia weather station provided 25 years of almost continuous precipitation data with adjusted raw data obtained from NOAA used to replace any gaps in that data. These precipitation data were selected by Bowman because it is most representative of the majority of Project facilities. Annual average precipitation for the Helvetia weather station is 19.73 inches.

Because the Helvetia Weather Station did not record that pan evaporation data, that data was obtained from the Nogales Weather Station, which is located approximately 35 miles south of the Project and at the same approximate elevation as the process area. The average pan evaporation obtained from the Nogales was 91.2 inches.

Finally, the statistical software package Hydrological Engineering Center – Statistical Software Package (HEC- SSP) and Helvetia precipitation data was used to calculate the 100-year, 24-hour and 1000-year, 24-hour storm events. The general frequency data and plot for Helvetia precipitation for the design storm event is 4.19 inches for the 100-year event and 5.80 for the 1,000-year event.

5.2 HEC-HMS Baseline Model Results

The development and construction of Project facilities, which include the TSFs, pits, HLF, WRF, and other related facilities, will alter the drainage pattern of several basins. In addition, surface runoff water that contacts operating facilities with potential to affect water quality (i.e., other contact water, processing facilities, TSFs, etc.) must be retained on site. A summary of Design Storm Mode contact water peak flow and volumes to be retained on site is shown in Table 6. A summary of contact water peak flow and volumes for the Continuous Mode is shown in Table 7. The data in these tables are used to design hydraulic stormwater management and control facilities.

Table 6: Project Facility Contact Water – Design Storm Mode

Project Facility	Peak Flow (cfs)
TSF 1	1,967.7
TSF 2	1,218
WRF1a	3,419.6
WRF1b	1,817.6
HLF	851.4

(Bowman-2022)

Table 7: Project Facility Contact Water- Continuous Mode*

Project Facility	Peak Flow (cfs)	Total Flow Volume (ac-ft)	Annual Average Flow (ac-ft)	Standard Deviation (ac-ft)
TSF 1	95.3	22383.8	861	408
TSF 2	34.9	8295.5	319	150
WRF1a	52.2	13173.5	507	228
WRF1b	28.9	7392.1	284	127
HLF	30.3	2905.3	112	81

(Bowman-2022)

6.0 Sediment Yield Management

Sediment control facility designs for the proposed Project layout that utilizes six mine pits are based in-part on review of previous studies done for the Rosemont Copper Project. Current designs are intended to reduce the total suspended solids (TSS) loads to the minimum practical level for the 10-year, 24-hour storm event.

6.1 Sediment Yield Analysis Methods and Findings

The Project will effectively isolate the upper tributary ephemeral drainages that have historically contributed stormwater flow and natural sediment loading to the northwest flowing main drainages. There are no site-specific TSS concentration measurements available for upper tributary drainages that transect the Project area. As a result, previous studies completed by Tetra Tech for the former Rosemont Copper Project on the east side of the Santa Rita Mountains were reviewed and the results applied as appropriate (Tetra Tech, 2010). These previous studies utilized industry standard SEDCAD 4 software (Civil Design Software, 2001), the revised form of the Universal Soil Loss Equation (RUSLE) equation (USDA, 2014), and guidance provided by the 1968 Pacific Southwest Inter-Agency Committee method (PSIAC, 1968).

Key components of the previous sediment yield analysis included:

- **Drainage basin delineation/characterization** – basin delineations and characteristics developed for the site-wide hydrology estimates were used in the analysis.
- **Rainfall-runoff estimates** – SEDCAD 4, with small differences (Modified Universal Soil Loss Equation [MUSLE] vs. RUSLE), procedurally identical to method taken to develop the site-wide hydrology results.
- **Representative grain size distribution** – sieve and hydrometer testing results from the exploration program were used to identify a representative grain size distribution for native material types. Also considered were waste rock (100% rock cover) and tailings under proposed Project conditions.

Analysis of samples collected from drainages on the east side of the Santa Rita Mountains (primarily Barrel and McCleary Canyon watersheds) indicated that approximately 1.6% weight of sediment to water-sediment mixture for both pre- and post-mining scenarios was typical (Tetra Tech, 2010). As confirmation, comparison of these data to that generated by several other water quality monitoring stations in Pima County proved these results consistent. Collective data sets indicate that in general, almost all the reported suspended sediment concentrations are less than 10 percent solids, and most of the available data is between 0.1 – 10%. This data is useful for the design of hydraulic structures that can handle the suspended load as well as bedload generated by storm events.

6.2 Sediment Control

In general, stormwater and the potential for erosion and increased sedimentation will be managed by diverting runoff from adjacent undisturbed areas around the Project facilities to the greatest extent practicable. Water management controls have been designed to ensure that stormwater that contacts process materials will not be discharged from the Project site. Runoff that is not eligible for release will be contained within the Project boundary and the water will be used in the process.

Sediment basins, including those associated with the WRF (Figures 5 through 10), are located based on topography, available space, and the anticipated sediment generating capacity of the contributing basin. Sizing of these basins will be completed prior to final design of the facility. The unlined basins will be designed to be non-jurisdictional dams per Arizona Department of Water Resources (ADWR) jurisdictional criteria. As the facilities progress, the sediment basins will be abandoned, and another sediment basin constructed. Both the upstream and downstream faces of the sediment basin embankments will be armored to prevent erosion if overtopping should occur during larger storm events.

Finally, stormwater controls that incorporate the waste rock shells for filtration, engineered sediment settling basins in conjunction with the implementation of construction BMPs are designed to meet the goal of decreasing sediment yield in off-site discharge to levels below natural, undisturbed conditions.

7.0 Best Management Practices

Engineered and construction controls (i.e., BMPs) appropriately designed for placement and capacity are intended to handle runoff generated from a 100-year, 24-hour storm event. In addition, design criteria include compliance with an anticipated Arizona Pollution Discharge Elimination System (AZPDES) Industrial Stormwater Mining Multi-Sector General Permit (MSGP) administered by ADEQ. Engineered (long-term) BMPs are incorporated into the Project design and construction (short-term) BMPs will be implemented or deployed throughout the various phases of Project construction and operation in accordance with a supporting Stormwater Pollution Prevention Plan. Individual BMPs are discussed below.

7.1 Construction

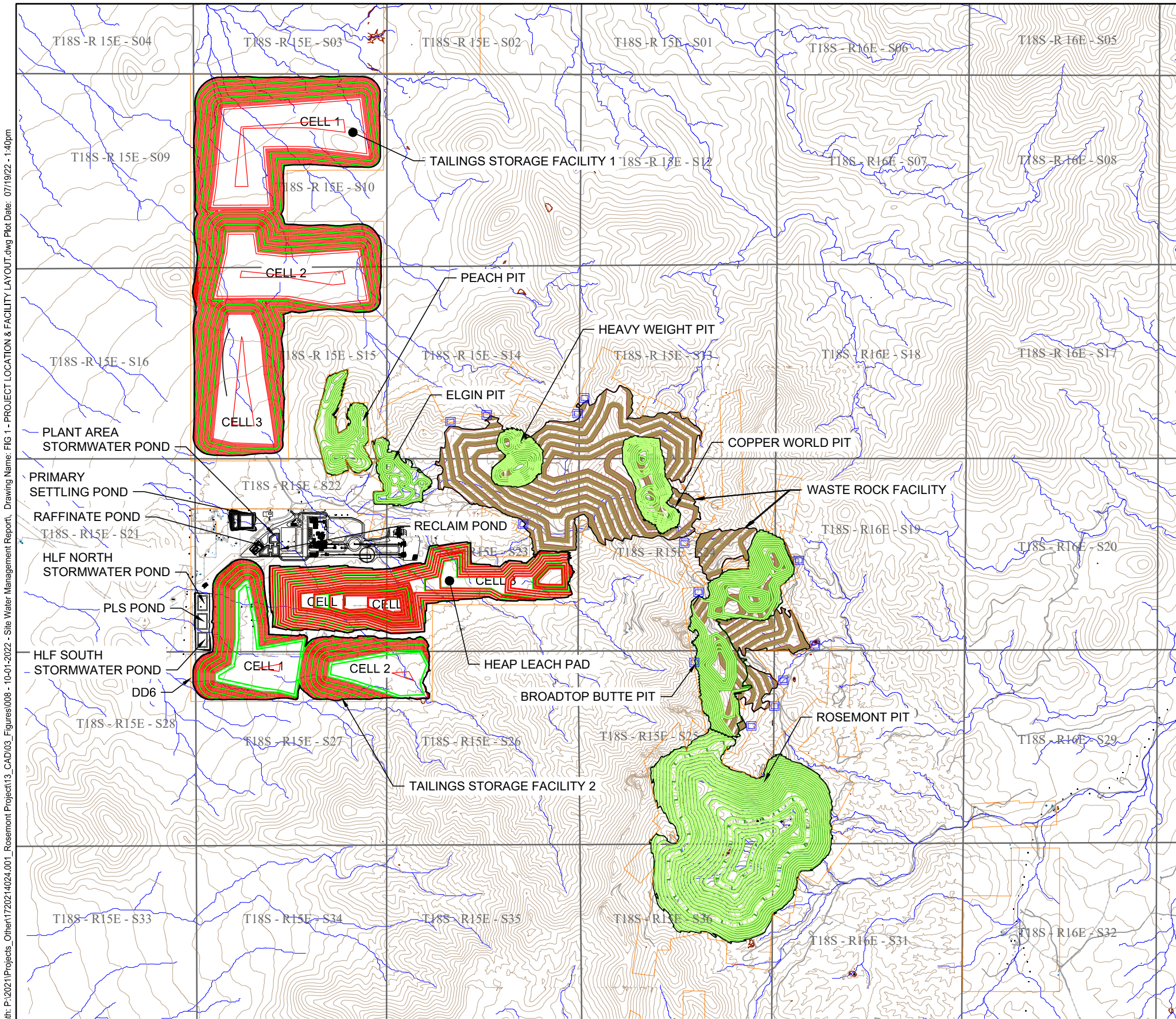
Industry standard construction BMPs used on a day-to-day basis on a site are proven to reduce or even eliminate surface erosion and lower TSS levels in storm water runoff from temporarily disturbed areas. Some BMPs are described below:

- **Minimization of surface disturbance** – to the extent possible, disturbance will be minimized during the sequential phases of execution of the Project.
- **Re-grading** - where ground cover is disturbed by tracked equipment or small excavations, the surface will be immediately returned to original grade and an appropriate seed mix will be applied as soon as seasonal conditions allow and as determined necessary.
- **Undisturbed buffer zones** - where possible, ground cover of existing desert shrubs and foliage will be left undisturbed to slow storm water runoff and allow sediment settling.
- **Revegetation** - vegetative cover will be restored as soon as practicable.

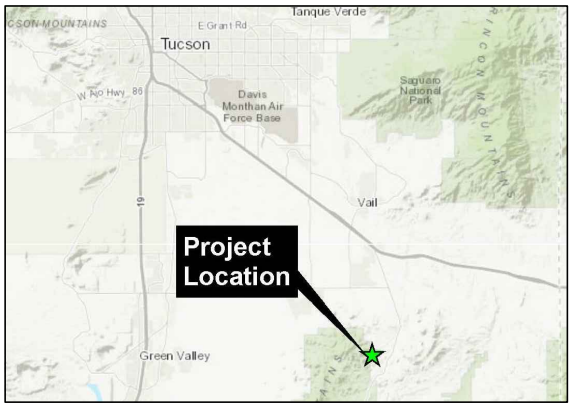
8.0 References

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- Civil Design Software, 2001. SEDCAD by Civil Software Design, LLC (mysedcad.com).
- Bowman, 2022. Rosemont Copper World Project, Baseline and Final Facility Configuration, Hydrology Modeling Report, Revision 3. Prepared for Piteau Associates, prepared by Bowman Consulting Group. 18 August 2022.
- PSIAC, 1968. Pacific Southwest Interagency Committee, Factors Affecting Sediment Yield in the Pacific Southwest Area and Measures for the Reduction of Erosion and Sediment Yield. October.
- US Department of Agriculture (USDA), 2014. Revised Universal Soil Loss Equation (RULSE). RUSLE1.06 and RUSLE2.
- Tetra Tech, 2007. Site Water Management Plan, prepared for Augusta Resource Corporation, prepared by Tetra Tech. June.
- Tetra Tech, 2010. Technical Memorandum, Rosemont Baseline and Post-mining Conditions – Alternatives Sediment Delivery. To Kathy Arnold, Rosemont Copper Company. April 9.

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report, Drawing Name: FIG 1 - PROJECT LOCATION & FACILITY LAYOUT.dwg Plot Date: 07/19/22 - 1:40pm



SITE PLAN
SCALE: 1" = 3000'



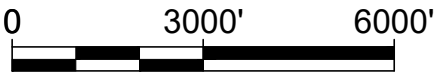
KEY PLAN
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NOTE(S):

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LEGEND:

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|------------------------|--------------------------|
| MAJOR CONTOURS ONLY | WASTE ROCK |
| PROPERTY BOUNDARY | PIT EXCAVATION AREA |
| PIMA COUNTY FLOODPLAIN | WRF SEDIMENT POND |
| ROAD | TAILINGS/ HEAP LEACH PAD |



ROSEMONT COPPER WORLD PROJECT
WATER HYDROLOGY
SITE WATER MANAGEMENT PLAN
PROJECT LOCATION & FACILITY LAYOUT

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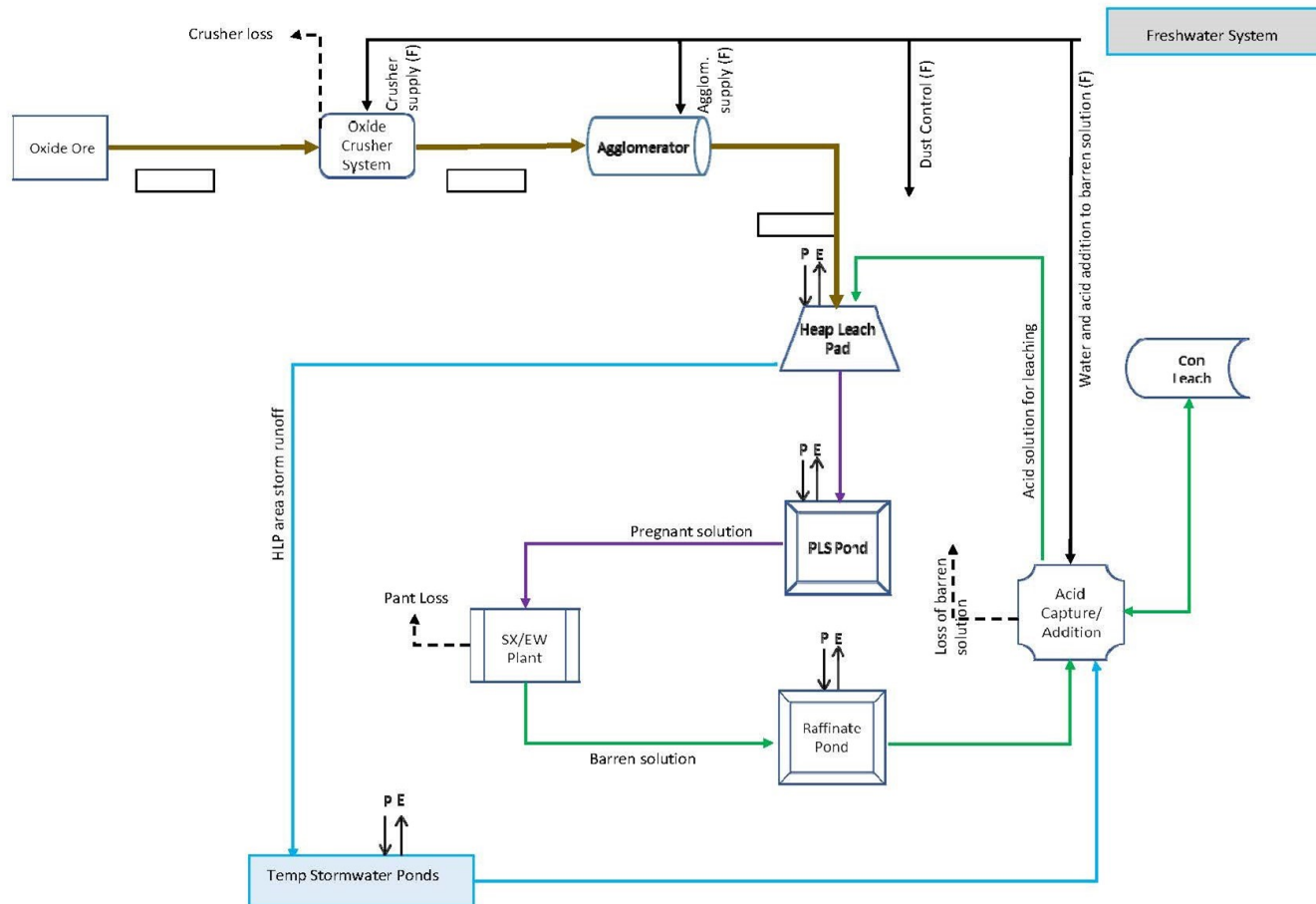
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Figure:

1

By: OAS Date: 21/12/21 Project No: 17-2021-4024

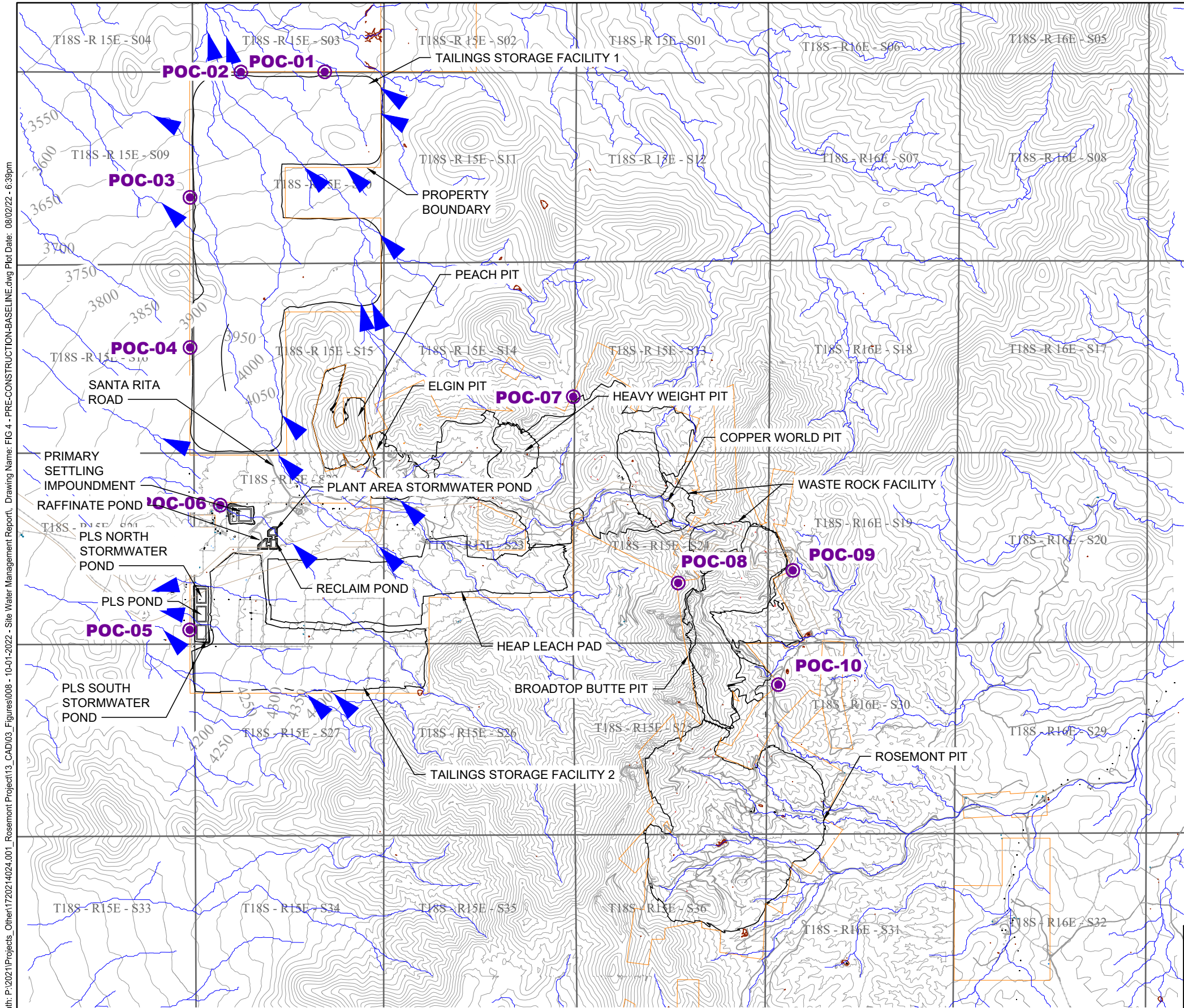
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CLIENT	ROSEMONT COPPER COMPANY	DRN BY VR	PROJECT NO. 1720214024.001
PROJECT	ROSEMONT COPPER WORLD PROJECT	CHK BY DJ	DATE 1/10/2022
TITLE	OXIDE ORE PROCESSING SUMMARY FLOWSHEET		FIGURE 3

Drawing Path: P:\2021\Projects_Other\172021-4024-001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report, Drawing Name: FIG 4 - PRE-CONSTRUCTION-BASELINE.dwg Plot Date: 08/02/22 - 6:39pm



SITE PLAN

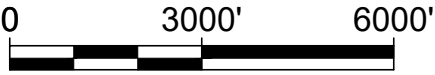
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NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.

LEGEND:

- FLOW DIRECTION
- MAJOR CONTOURS
- PROPERTY BOUNDARY
- PIMA COUNTY FLOODPLAIN
- POINT OF COMPLIANCE



ROSEMONT COPPER WORLD PROJECT
SITE WATER MANAGEMENT PLAN
PRE-CONSTRUCTION
BASELINE CONDITIONS

wood.

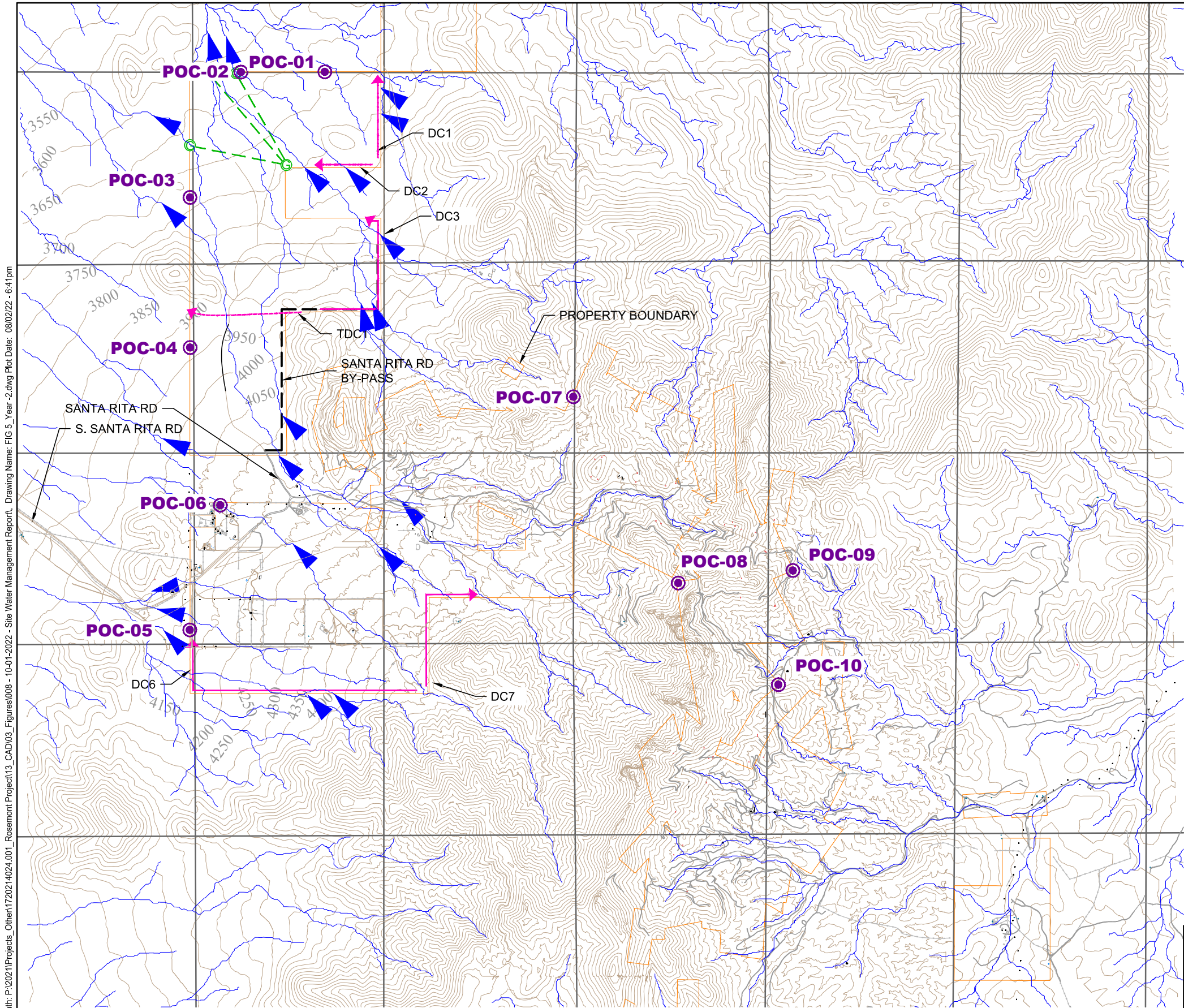
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Figure:

4

By: OAS Date: 11/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report, Drawing Name: FIG 5_Year -2.dwg Plot Date: 09/02/22 - 6:41pm



SITE PLAN

SCALE: 1" = 3000'

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE WATER MANAGEMENT PLAN.

LEGEND:

- MAJOR CONTOURS
- FLOW DIRECTION
- PROPERTY BOUNDARY
- PIMA COUNTY FLOODPLAIN
- PERMANENT DIVERSION CHANNEL
- TEMPORARY DIVERSION CHANNEL
- ROAD
- STORMWATER COLLECTION GALLERY (NON-CONTACT WATER)
- NON-CONTACT WATER PIPELINE
- DC1 DIVERSION CHANNEL ABBREVIATION
- POINT OF COMPLIANCE

ROSEMONT COPPER WORLD PROJECT
SITE WATER MANAGEMENT PLAN
OPERATION SEQUENCE
PRE-CONSTRUCTION
YEAR -2

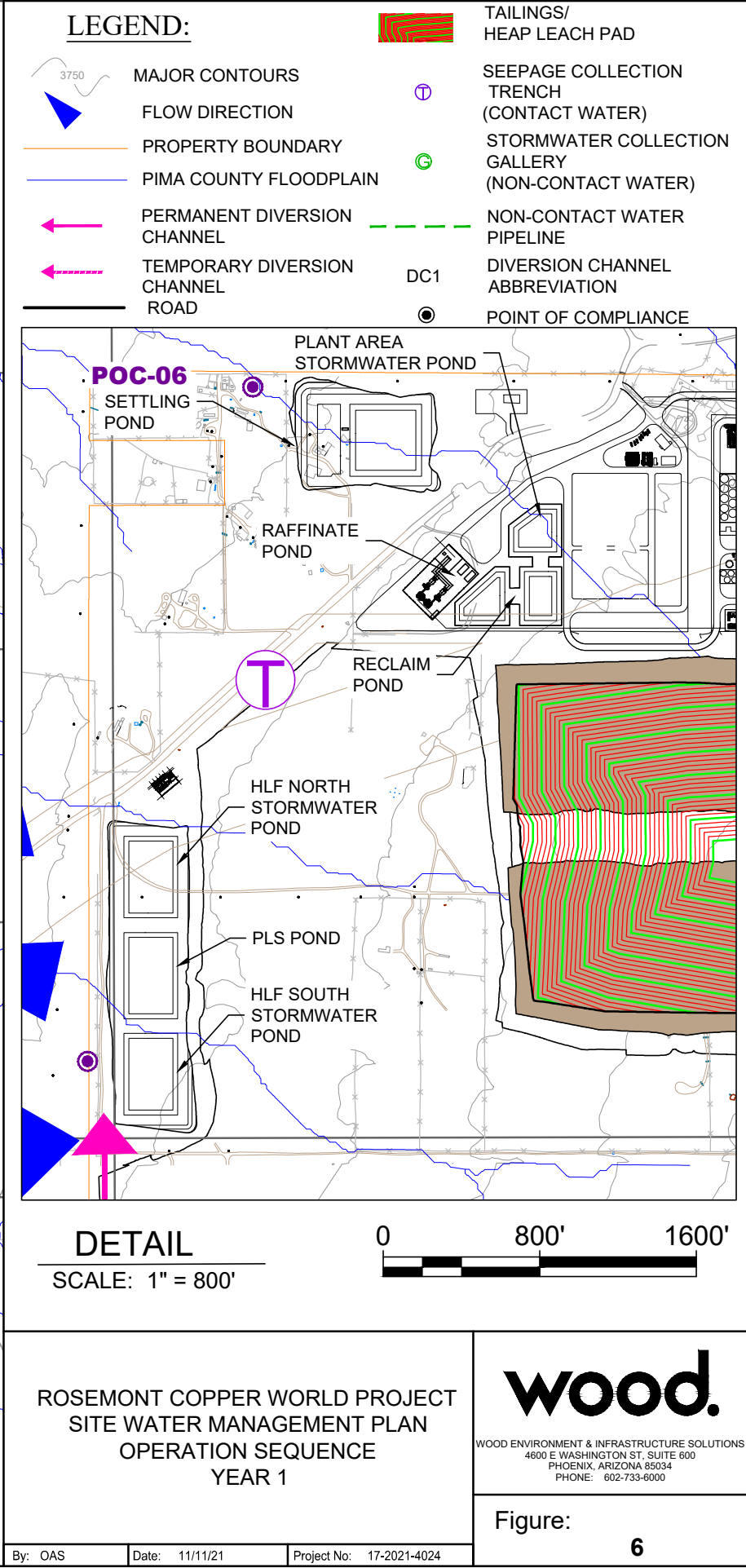
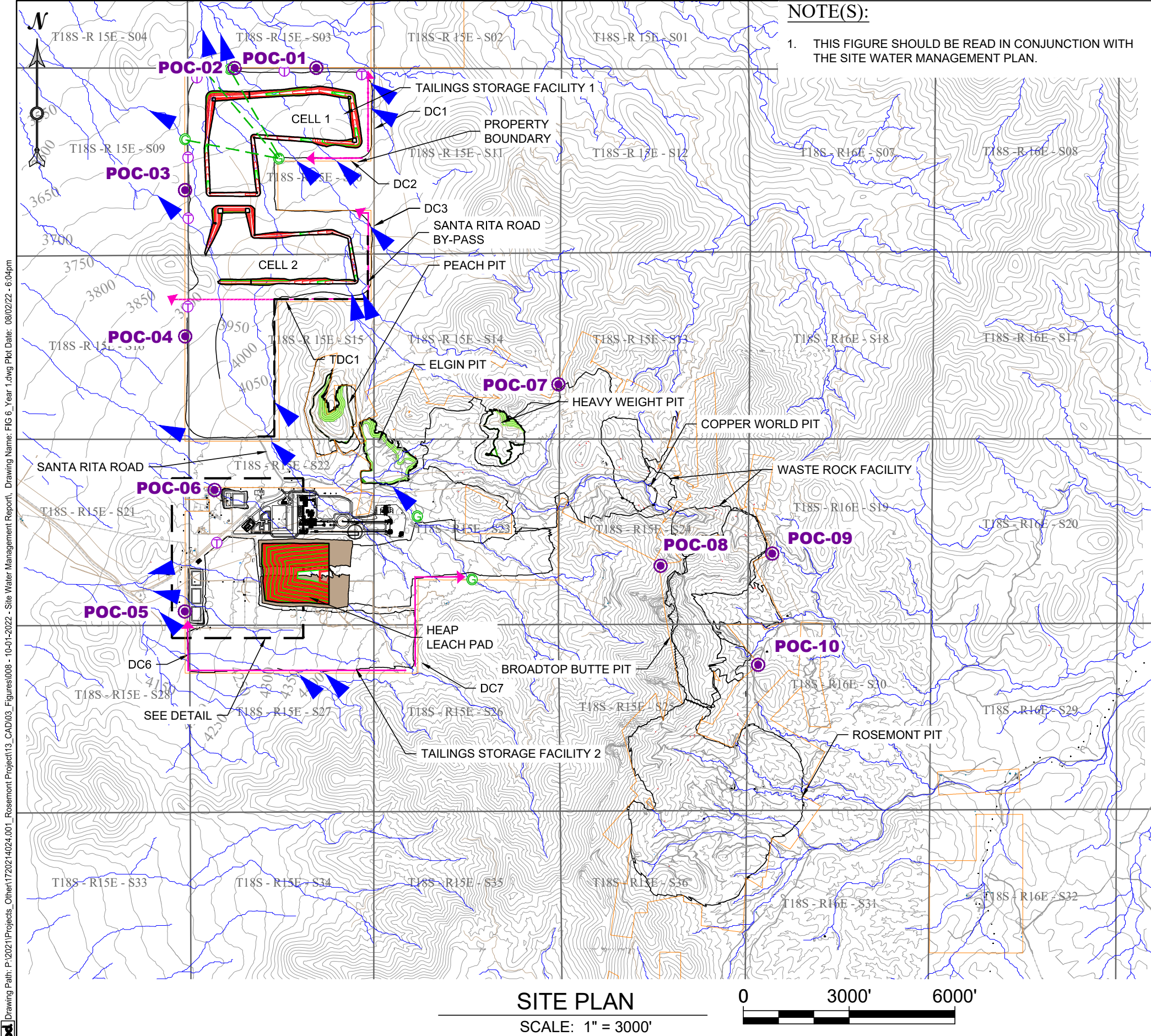
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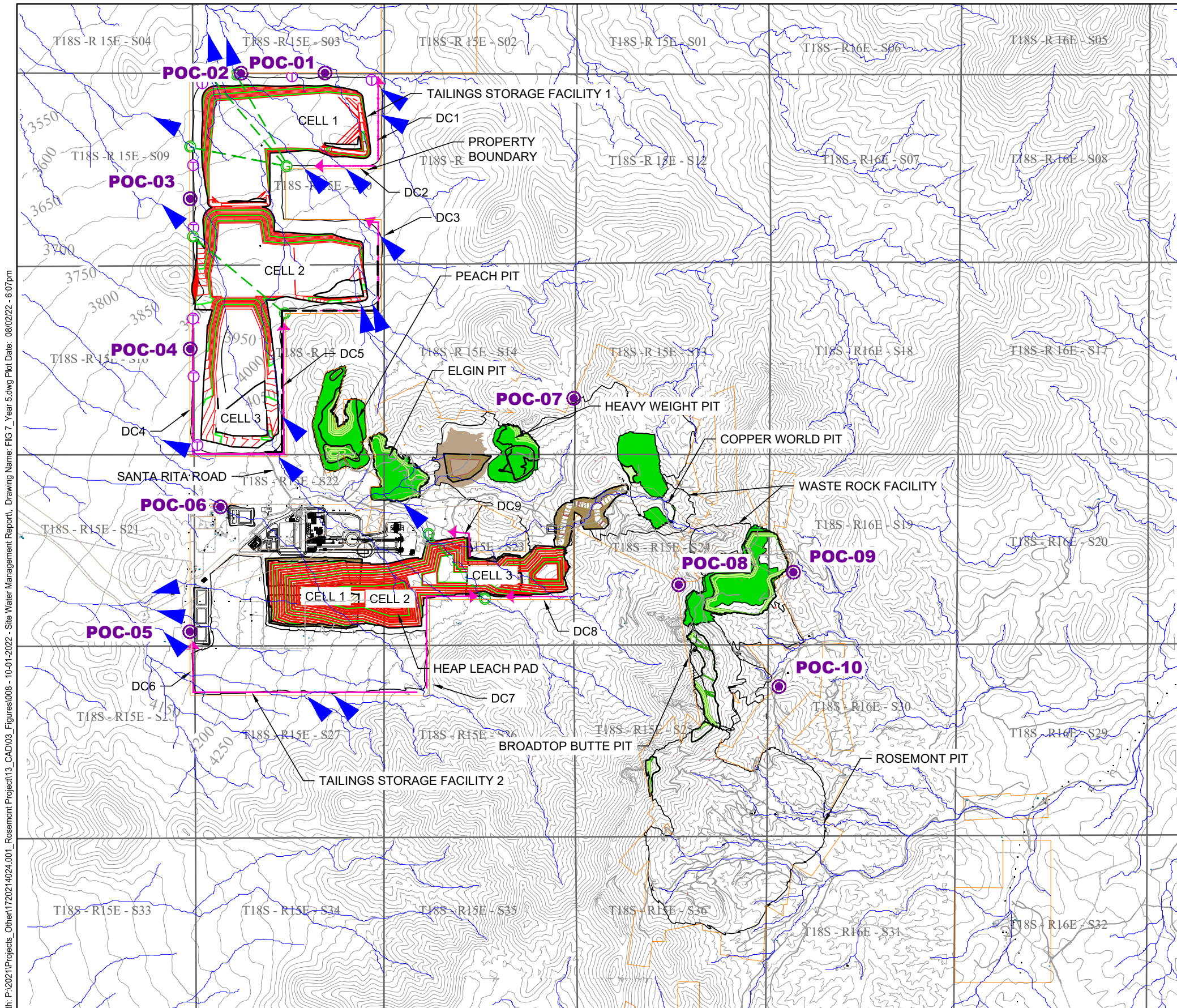
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By: OAS Date: 11/11/21 Project No: 17-2021-4024



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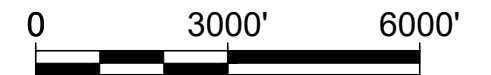
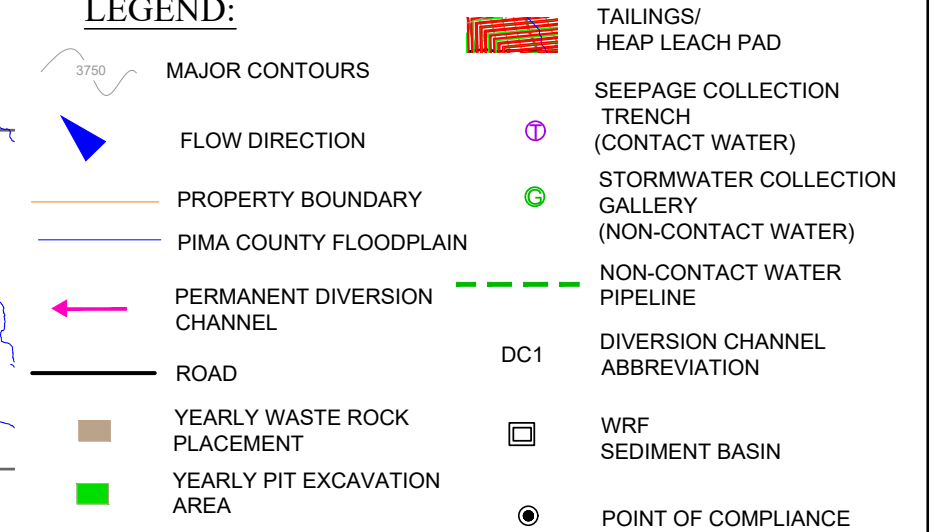


SITE PLAN
SCALE: 1" = 3000'

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.

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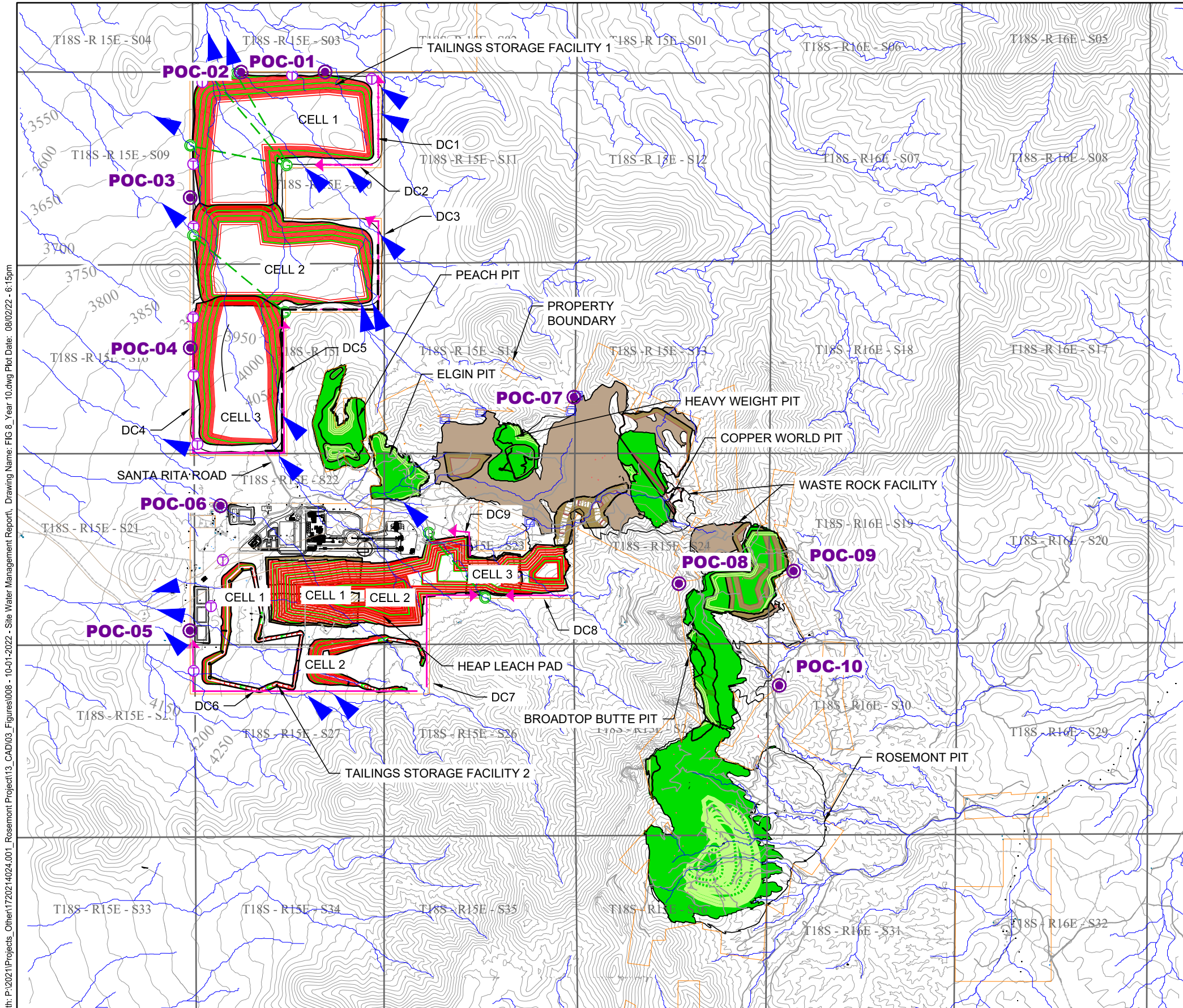
ROSEMONT COPPER WORLD PROJECT
SITE WATER MANAGEMENT PLAN
OPERATION SEQUENCE
YEAR 5

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Figure:
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By: OAS Date: 11/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024\001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report, Drawing Name: FIG 8_Year 10.dwg Plot Date: 08/02/22 - 6:15pm

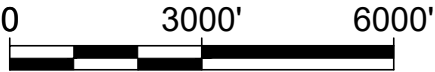


NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.

LEGEND:

- MAJOR CONTOURS
FLOW DIRECTION
PROPERTY BOUNDARY
PIMA COUNTY FLOODPLAIN
PERMANENT DIVERSION CHANNEL
ROAD
YEARLY WASTE ROCK PLACEMENT
YEARLY PIT EXCAVATION AREA
TAILINGS/ HEAP LEACH PAD
SEEPAGE COLLECTION TRENCH (CONTACT WATER)
STORMWATER COLLECTION GALLERY (NON-CONTACT WATER)
NON-CONTACT WATER PIPELINE
DIVERSION CHANNEL ABBREVIATION
WRF SEDIMENT BASIN
POINT OF COMPLIANCE



SITE PLAN

SCALE: 1" = 3000'

ROSEMONT COPPER WORLD PROJECT
SITE WATER MANAGEMENT PLAN
OPERATION SEQUENCE
YEAR 10

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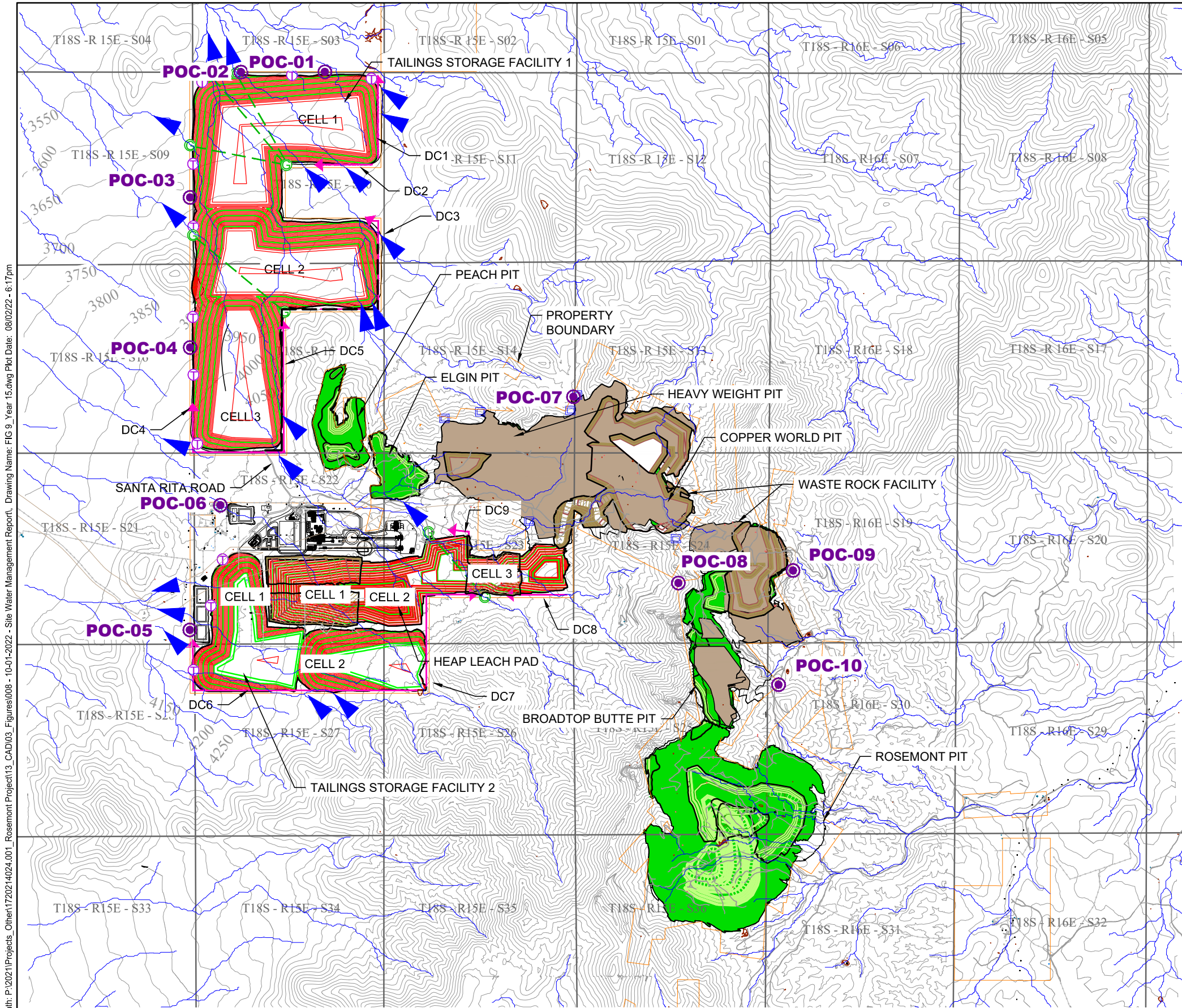
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Figure:

8

By: OAS Date: 11/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 9_Year 15.dwg Plot Date: 08/02/22 - 6:17pm



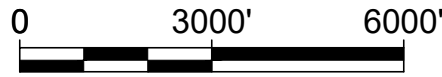
SITE PLAN
SCALE: 1" = 3000'

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.

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|--|-----------------------------|--|---|
| | MAJOR CONTOURS | | TAILINGS/ HEAP LEACH PAD |
| | FLOW DIRECTION | | SEEPAGE COLLECTION TRENCH (CONTACT WATER) |
| | PROPERTY BOUNDARY | | STORMWATER COLLECTION GALLERY (NON-CONTACT WATER) |
| | PIMA COUNTY FLOODPLAIN | | NON-CONTACT WATER PIPELINE |
| | PERMANENT DIVERSION CHANNEL | | DC1 DIVERSION CHANNEL ABBREVIATION |
| | ROAD | | WRF SEDIMENT BASIN |
| | YEARLY WASTE ROCK PLACEMENT | | POINT OF COMPLIANCE |
| | YEARLY PIT EXCAVATION AREA | | |



ROSEMONT COPPER WORLD PROJECT
SITE WATER MANAGEMENT PLAN
OPERATION SEQUENCE
YEAR 15

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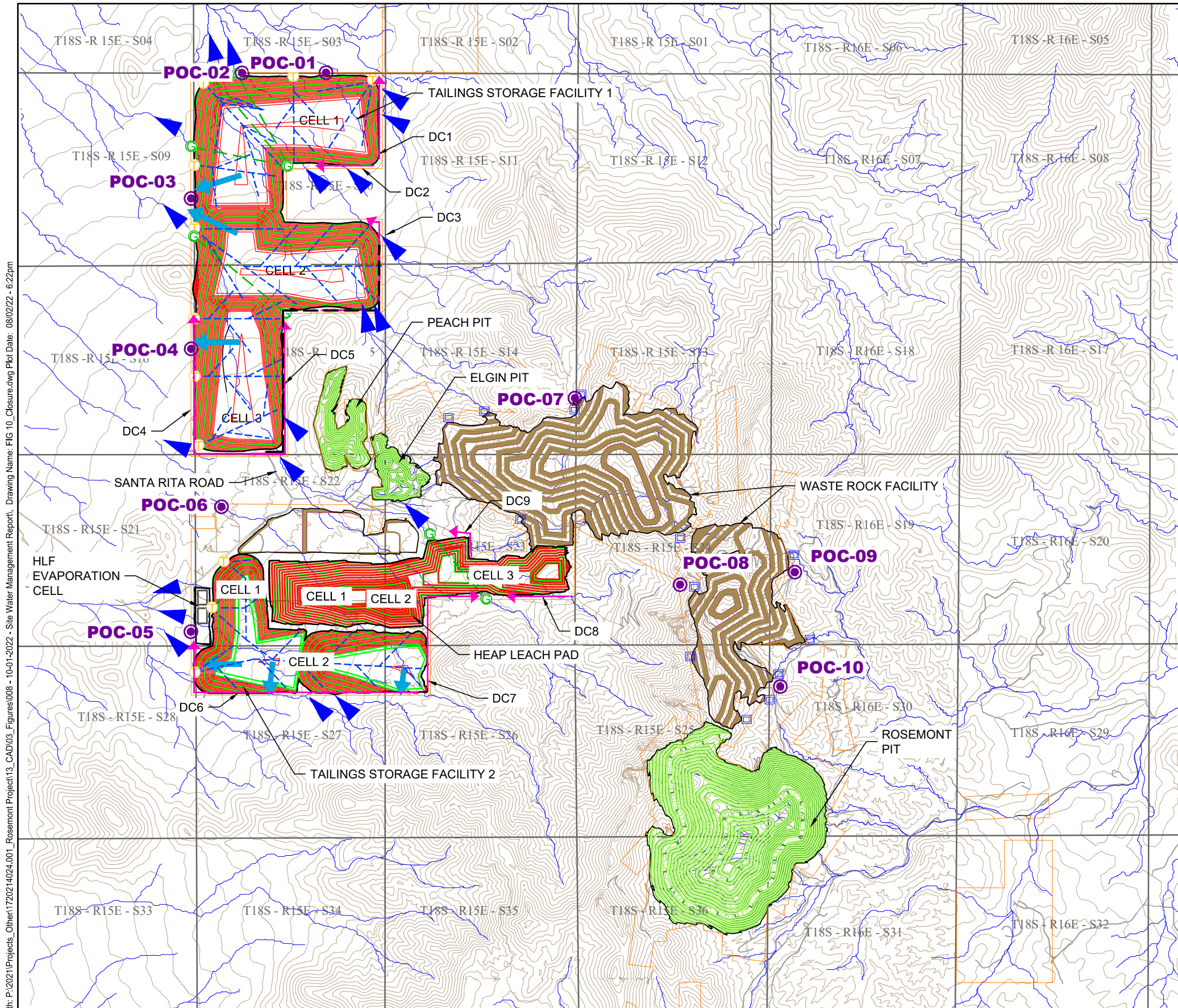
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Figure:

9

By: OAS Date: 11/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 10_Closure.dwg Plot Date: 08/02/22 - 6:22pm



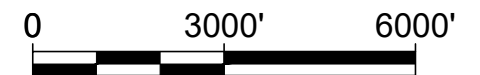
SITE PLAN
SCALE: 1" = 3000'

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.

LEGEND:

- | | |
|-----------------------------|---|
| MAJOR CONTOURS | TAILINGS/HEAP LEACH PAD |
| FLOW DIRECTION | SULFATE REDUCING TREATMENT CELLS |
| PROPERTY BOUNDARY | STORMWATER COLLECTION GALLERY (NON-CONTACT WATER) |
| PIMA COUNTY FLOODPLAIN | NON-CONTACT WATER PIPELINE |
| PERMANENT DIVERSION CHANNEL | DC1 DIVERSION CHANNEL ABBREVIATION |
| ROAD | WRF SEDIMENT POND |
| YEARLY WASTE ROCK PLACEMENT | TSF RUNOFF CHANNEL |
| YEARLY PIT EXCAVATION AREA | POINT OF COMPLIANCE |



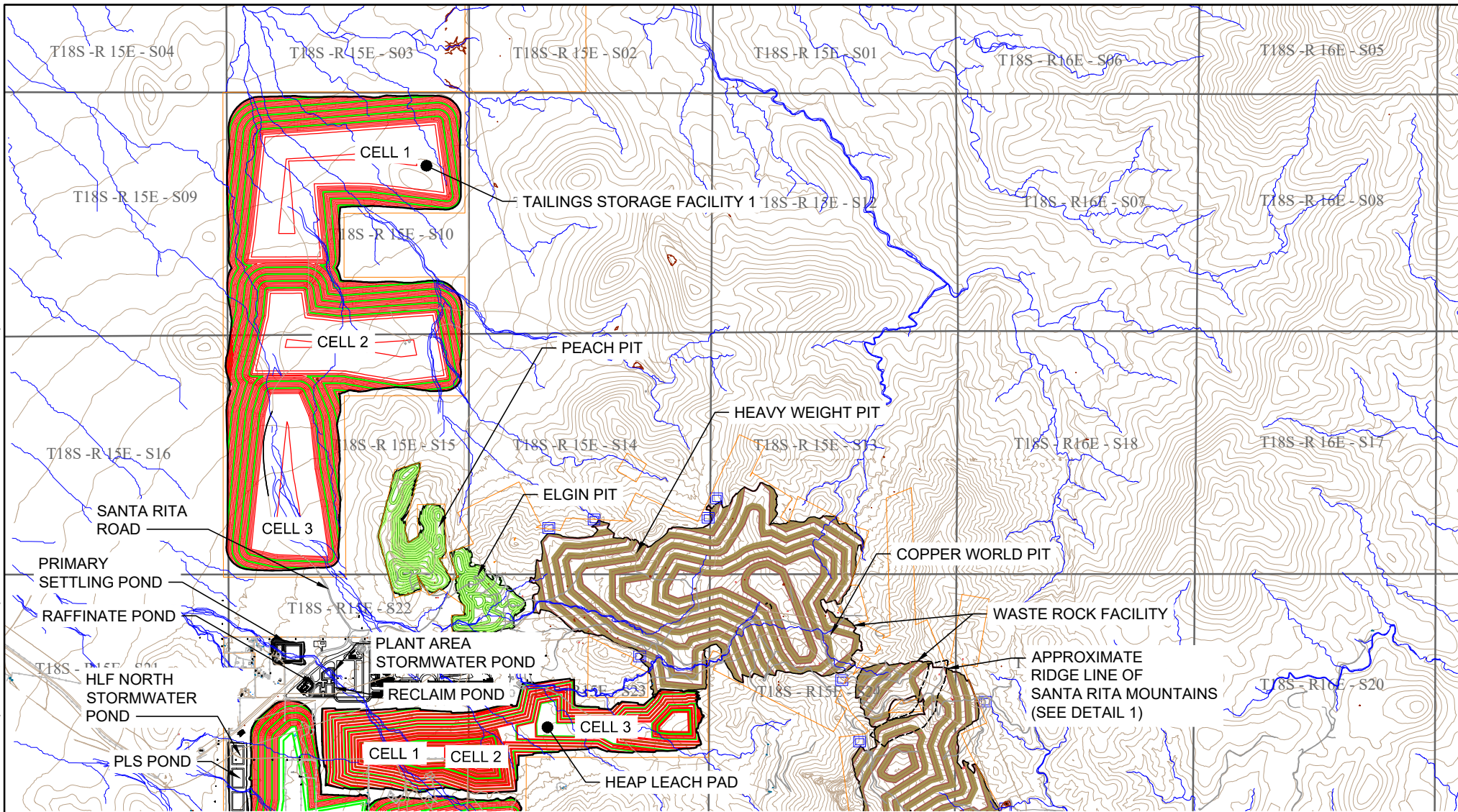
ROSEMONT COPPER WORLD PROJECT
SITE WATER MANAGEMENT PLAN
OPERATION SEQUENCE
CLOSURE

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Figure:
10

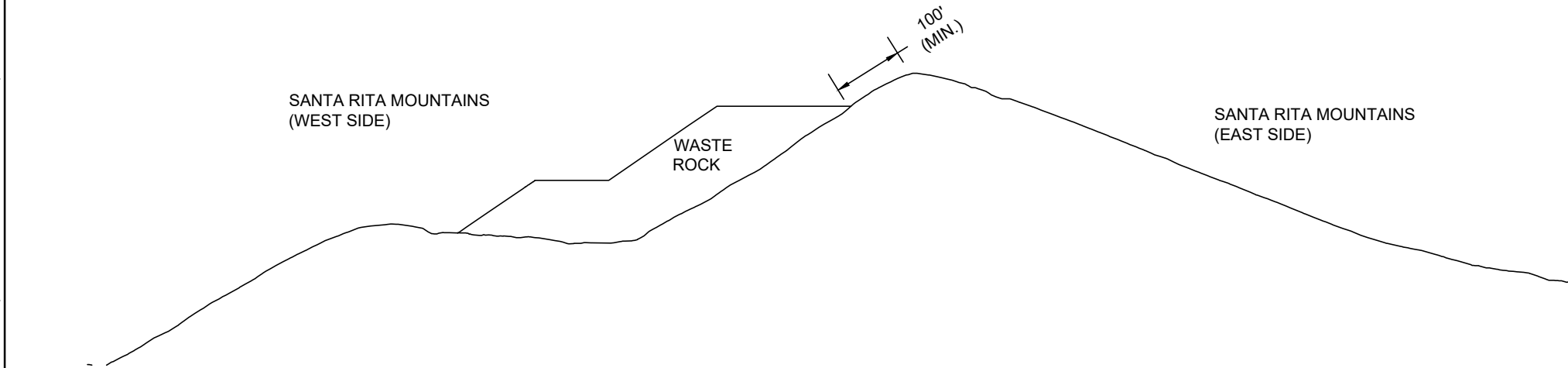
By: OAS Date: 11/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report, Drawing Name: FIG 11 - WASTE ROCK PLACEMENT DETAIL.dwg Plot Date: 07/22/22 - 1:04pm



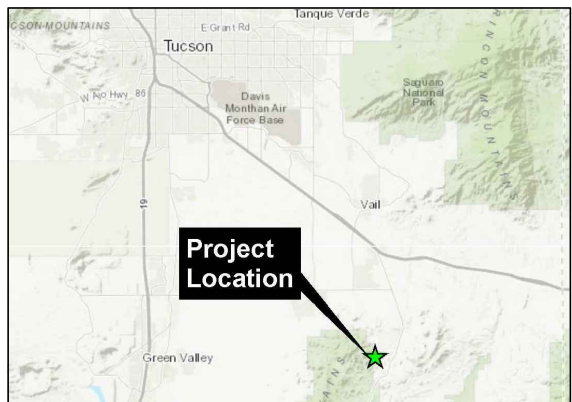
SITE PLAN

SCALE: 1" = 3000'



DETAIL 1

SCALE: N.T.S.



KEY PLAN

SCALE: N.T.S.

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
2. DETAIL 1 IS A PICTORIAL REPRESENTATION OF THE PLACEMENT OF WASTE ROCK UP AGAINST THE SANTA RITA MOUNTAIN RANGE AND IS NOT TO SCALE.

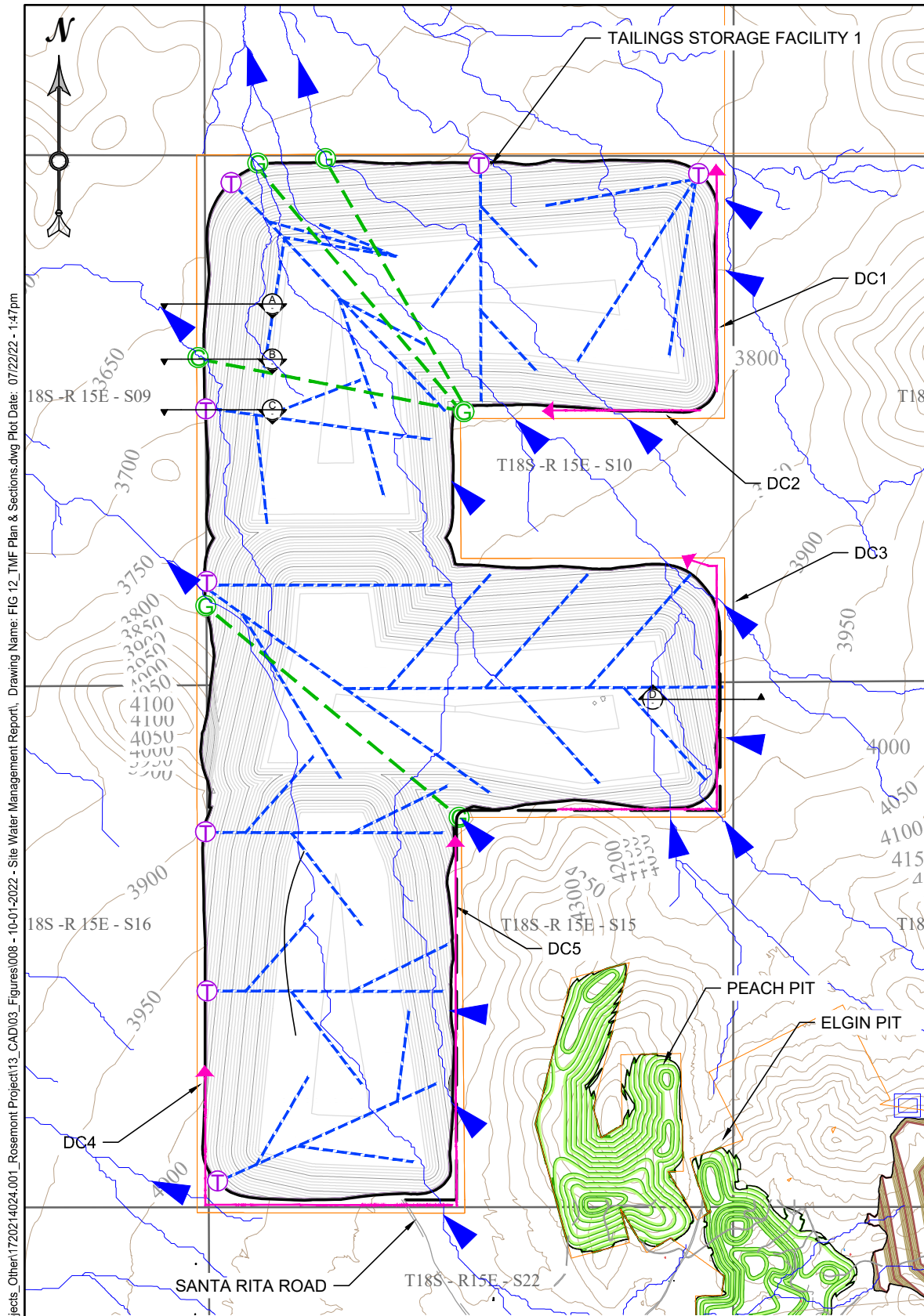
LEGEND:

	PROPERTY BOUNDARY		WASTE ROCK
	PIMA COUNTY FLOODPLAIN		PIT EXCAVATION AREA
	ROAD		WRF SEDIMENT BASIN
	TAILINGS/ HEAP LEACH PAD		

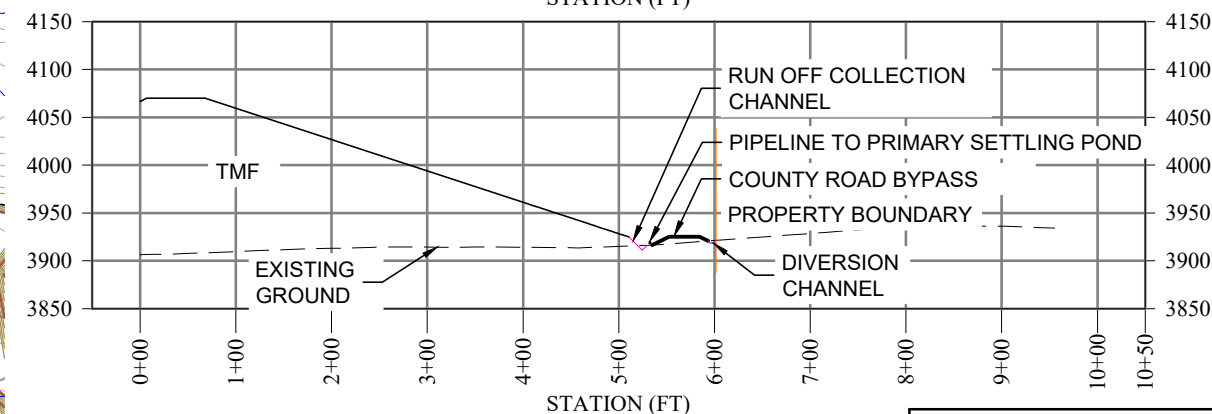
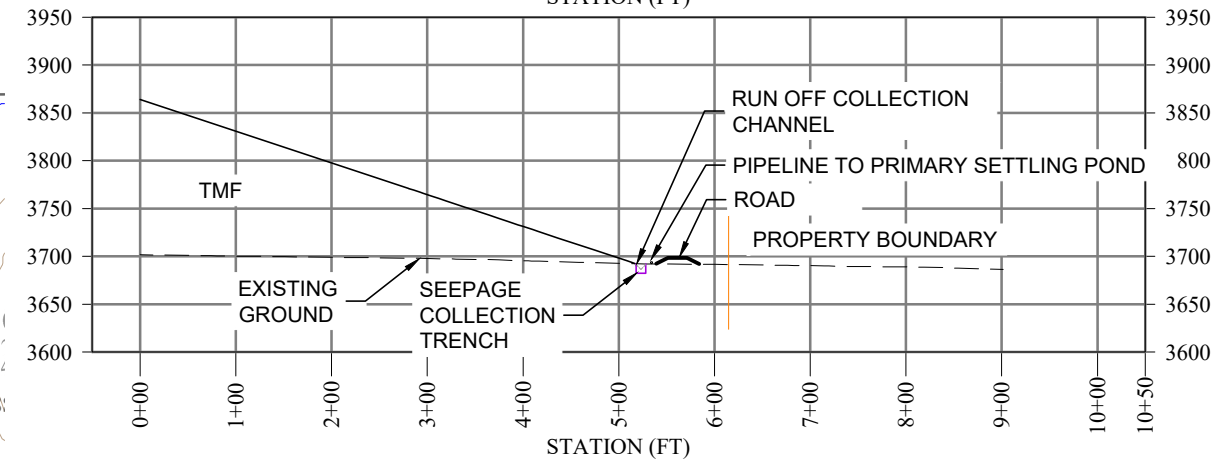
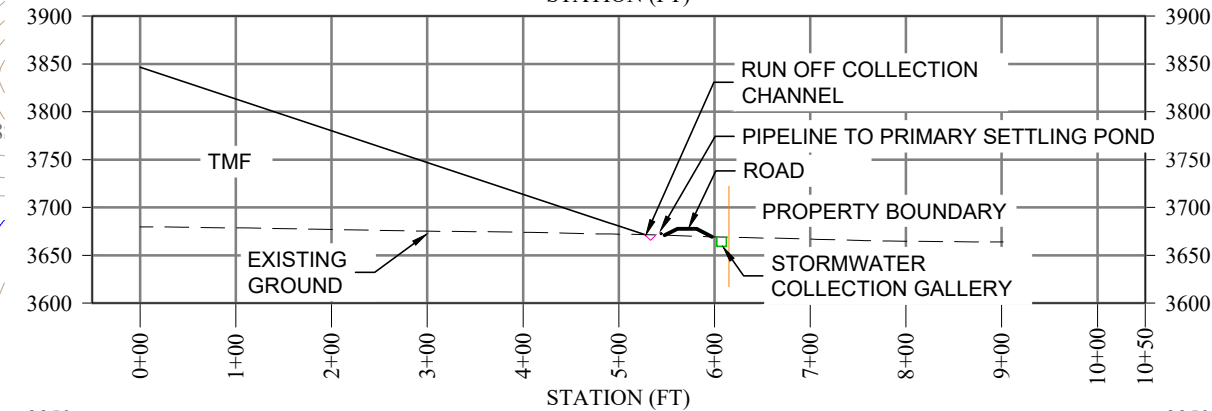
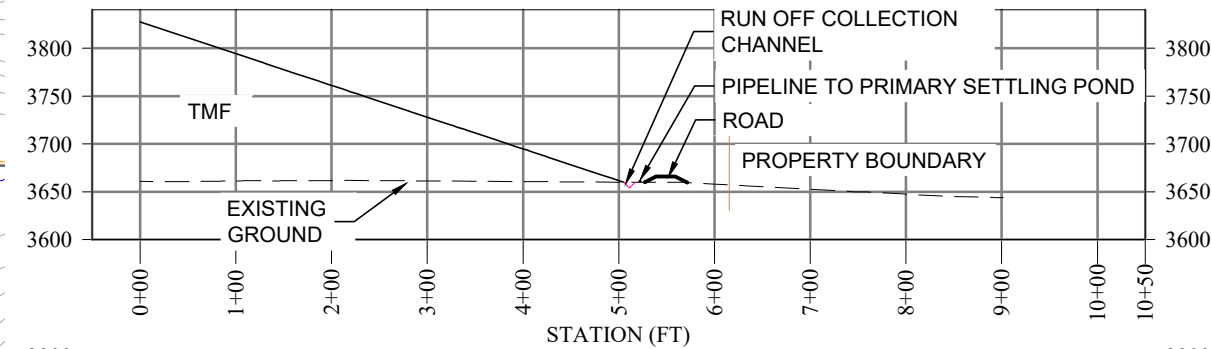
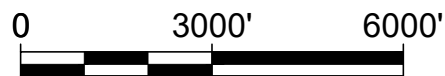


ROSEMONT COPPER WORLD PROJECT WATER HYDROLOGY SITE WATER MANAGEMENT PLAN SANTA RITA MOUNTAINS & WASTE ROCK PLACEMENT DETAIL		 WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS 4600 E WASHINGTON ST, SUITE 600 PHOENIX, ARIZONA 85034 PHONE: 602-733-6000
By: OAS	Date: 21/12/21	
		Figure: 11

Drawing Path: P:\2021\Projects_Other\1720214024-001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report, Drawing Name: FIG 12_TMF Plan & Sections.dwg Plot Date: 07/22/22 - 1:47pm



SITE PLAN
SCALE: 1" = 1500'



- SECTION A
SCALE 1"=200'
- SECTION B
SCALE 1"=200'
- SECTION C
SCALE 1"=200'
- SECTION D
SCALE 1"=200'

NOTE(S):

- THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.

LEGEND:

- MAJOR CONTOURS
- FLOW DIRECTION
- PROPERTY BOUNDARY
- PIMA COUNTY FLOODPLAIN
- PERMANENT DIVERSION CHANNEL
- ROAD
- YEARLY WASTE ROCK PLACEMENT
- YEARLY PIT EXCAVATION AREA
- TAILINGS/ HEAP LEACH PAD
- SEEPAGE COLLECTION TRENCH
- STORMWATER COLLECTION GALLERY (NON-CONTACT WATER)
- NON-CONTACT WATER PIPELINE
- NON-CONTACT WATER PIPELINE
- DIVERSION CHANNEL ABBREVIATION
- WRF SEDIMENT POND



ROSEMONT COPPER WORLD PROJECT SITE WATER MANAGEMENT PLAN TSF PLAN & SECTIONS

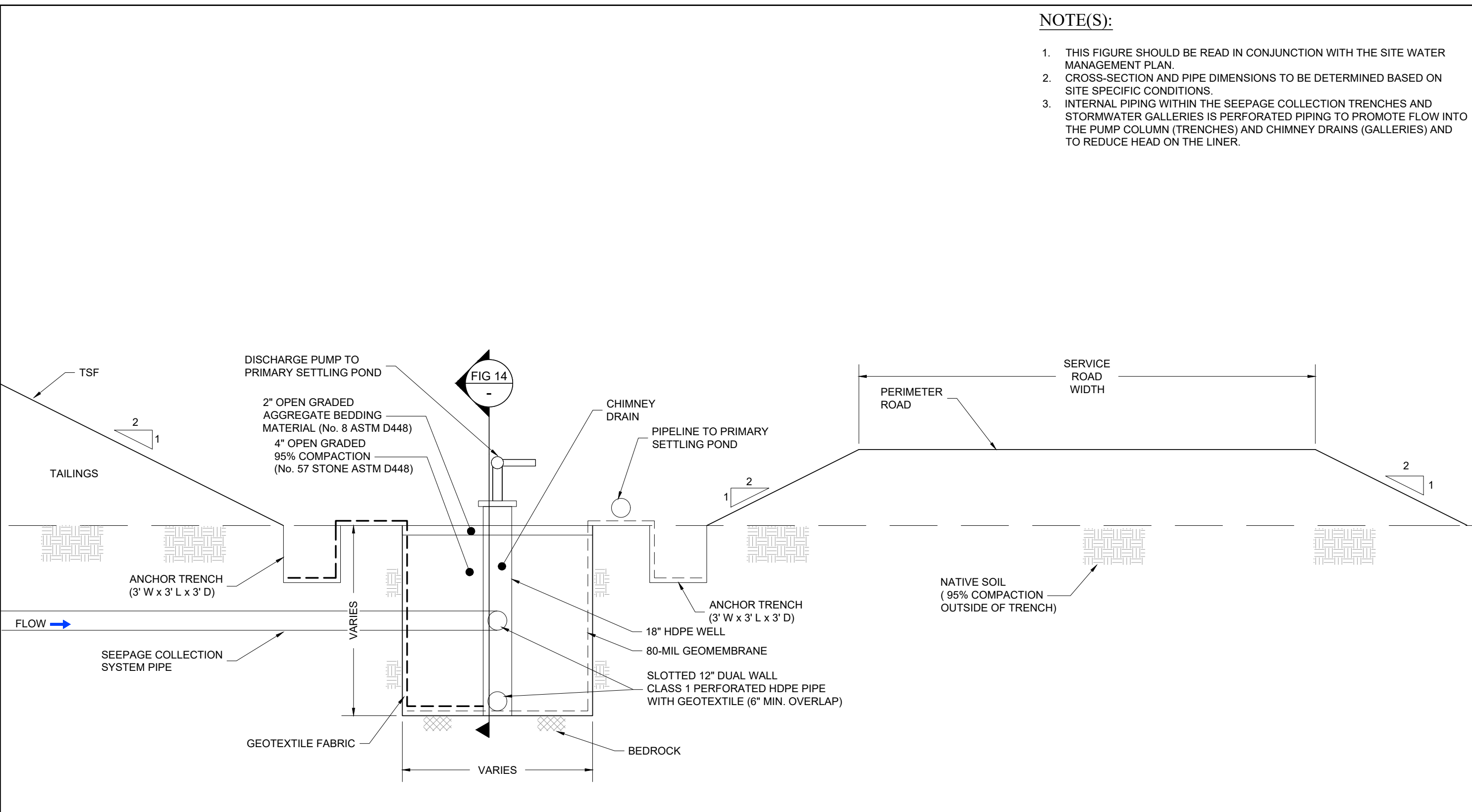
By: OAS Date: 11/11/21 Project No: 17-2021-4024

wood.

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST, SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:
12

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\, Drawing Name: FIG 13- SEEPAGE COLLECTION TRENCH_LONG SECTION.dwg Plot Date: 07/22/22 - 3:31pm



- NOTE(S):
1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
 2. CROSS-SECTION AND PIPE DIMENSIONS TO BE DETERMINED BASED ON SITE SPECIFIC CONDITIONS.
 3. INTERNAL PIPING WITHIN THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES IS PERFORATED PIPING TO PROMOTE FLOW INTO THE PUMP COLUMN (TRENCHES) AND CHIMNEY DRAINS (GALLERIES) AND TO REDUCE HEAD ON THE LINER.

TYPICAL SECTION
SCALE: N.T.S.

ROSEMONT COPPER WORLD PROJECT
TAILING STORAGE FACILITY
TSF SEEPAGE COLLECTION TRENCH
TYPICAL SECTION

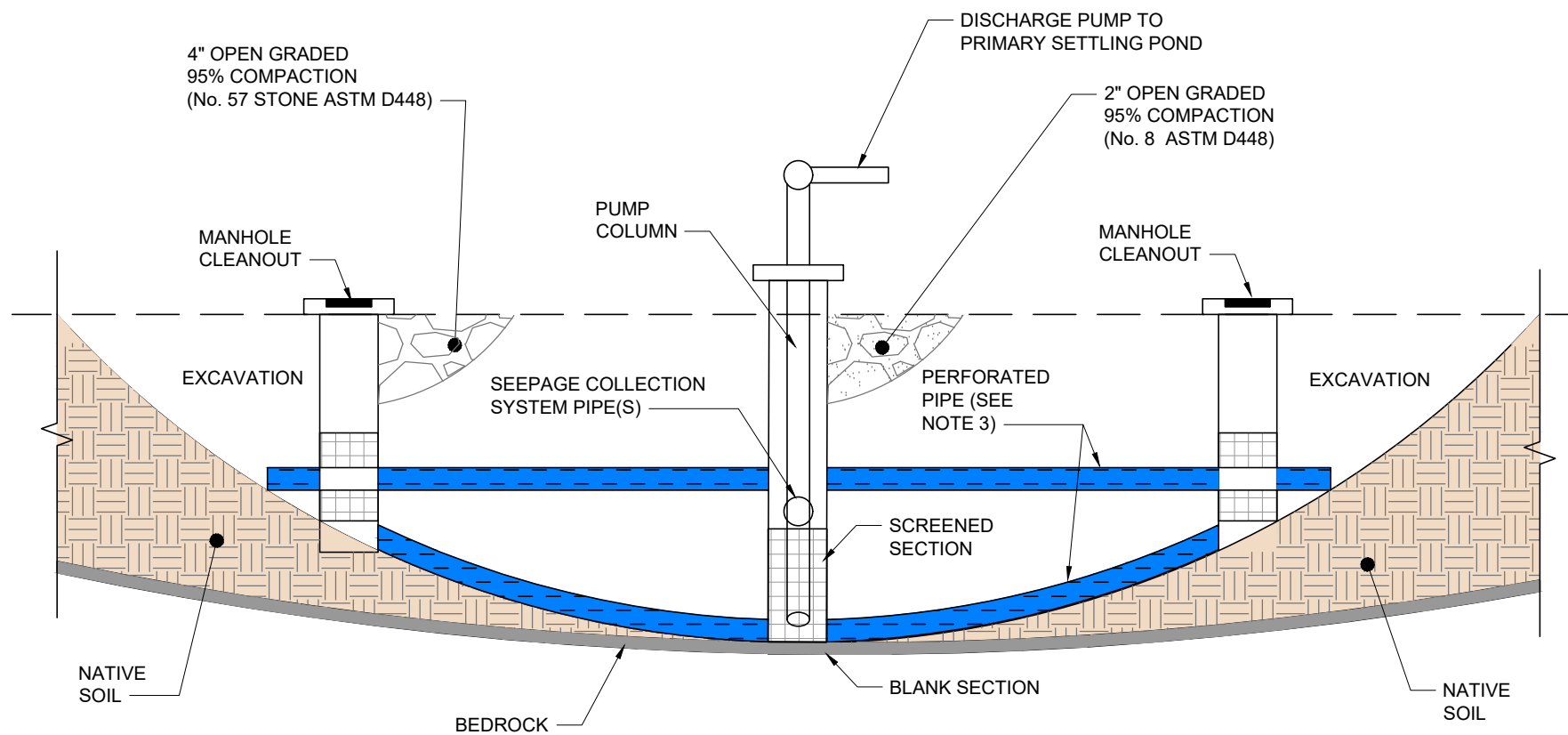
wood.
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST, SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:

13

By: GG Date: 17/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 14- SEEPAGE COLLECTION TRENCH_LAT SECTION.dwg Plot Date: 07/22/22 - 3:34pm



TYPICAL CROSS SECTION
OF TSF SEEPAGE COLLECTION TRENCH
USING HORIZONTAL PERFORATED PIPE
SCALE: N.T.S.

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
2. CROSS-SECTION AND PIPE DIMENSIONS TO BE DETERMINED BASED ON SITE SPECIFIC CONDITIONS.
3. INTERNAL PIPING WITHIN THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES IS PERFORATED PIPING TO PROMOTE FLOW INTO THE PUMP COLUMN (TRENCHES) AND CHIMNEY DRAINS (GALLERIES) AND TO REDUCE HEAD ON THE LINER.

ROSEMONT COPPER WORLD PROJECT
TAILINGS STORAGE FACILITY
TYPICAL CROSS SECTION
SEEPAGE COLLECTION TRENCH

wood.

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST. SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:

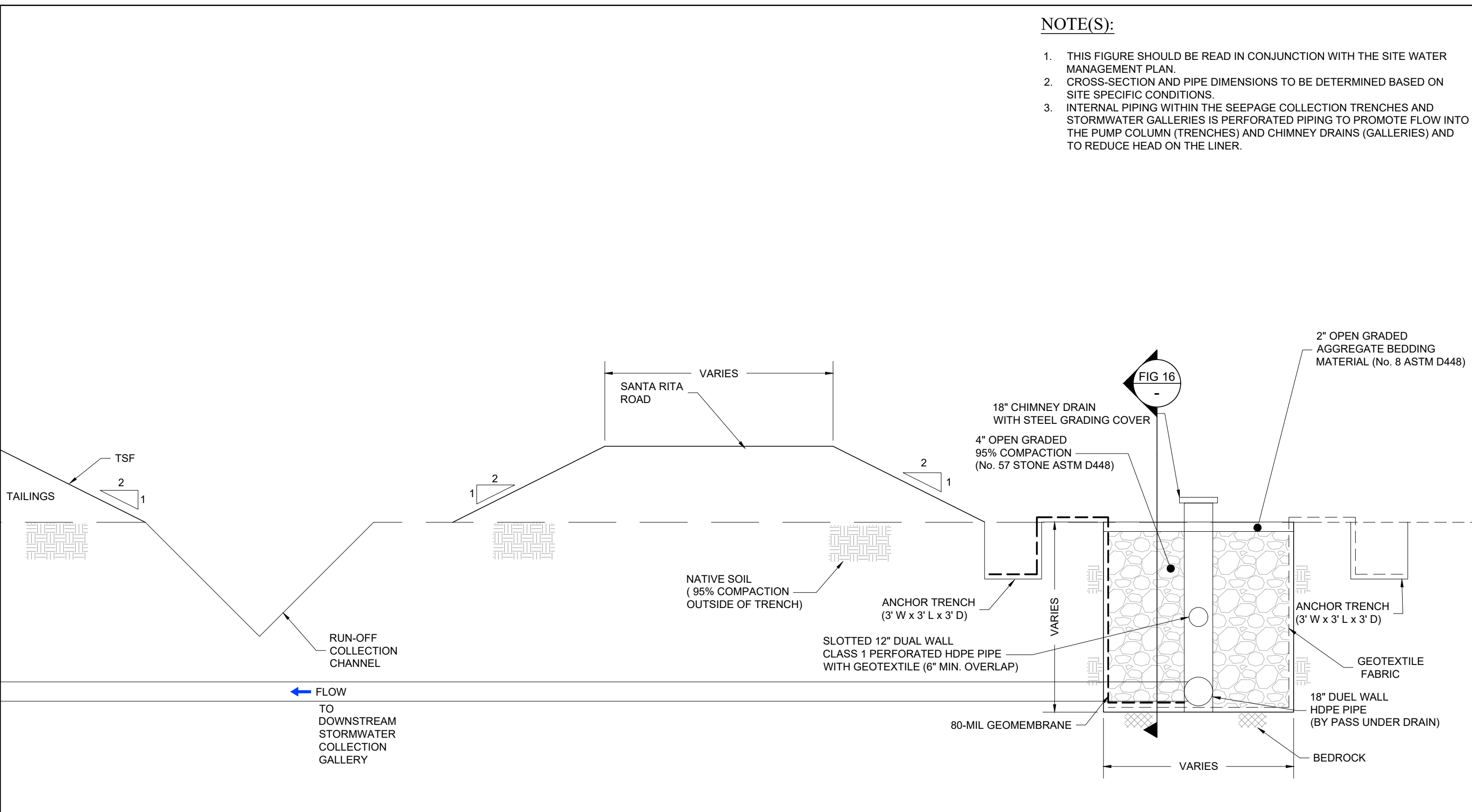
14

By: GG

Date: 09/12/21

Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\172021-4024-001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\, Drawing Name: FIG 15 - UPGRADE STORMWATER GALLERY LAT SECTION.dwg Plot Date: 07/24/22 - 12:19pm



- NOTE(S):
1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
 2. CROSS-SECTION AND PIPE DIMENSIONS TO BE DETERMINED BASED ON SITE SPECIFIC CONDITIONS.
 3. INTERNAL PIPING WITHIN THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES IS PERFORATED PIPING TO PROMOTE FLOW INTO THE PUMP COLUMN (TRENCHES) AND CHIMNEY DRAINS (GALLERIES) AND TO REDUCE HEAD ON THE LINER.

TYPICAL SECTION
SCALE: N.T.S.

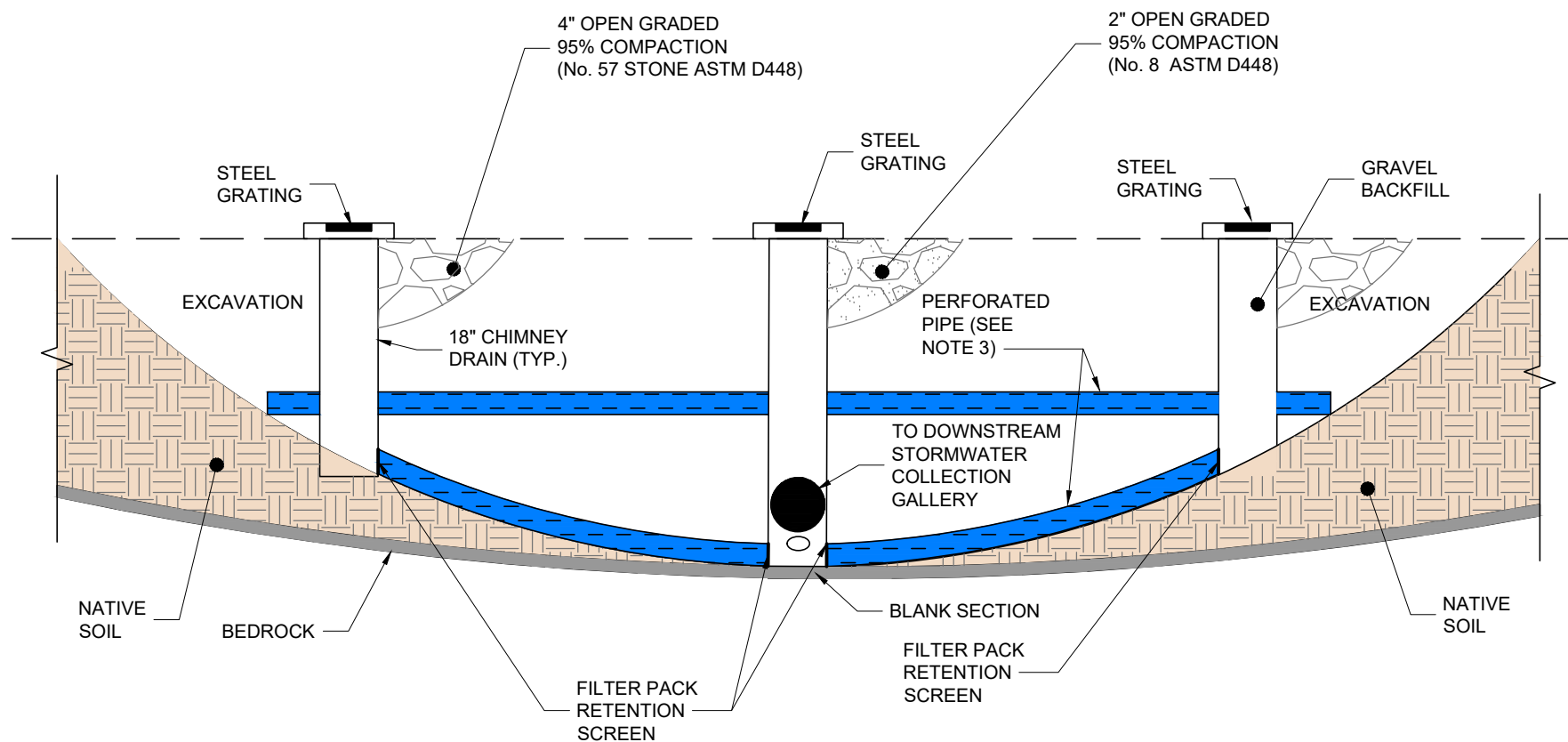
ROSEMONT COPPER WORLD PROJECT
TAILING STORAGE FACILITY
TSF & HLF UPGRADE STORMWATER
COLLECTION GALLERY
TYPICAL SECTION

wood.
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST., SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:
15

By: GG Date: 17/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 16 - UPGRADE STORMWATER GALLERY_LONG SECTION.dwg Plot Date: 07/24/22 - 12:22pm



TYPICAL CROSS SECTION
OF TSF UPGRADE STORMWATER
COLLECTION GALLERY
USING HORIZONTAL PERFORATED PIPE
SCALE: N.T.S.

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
2. CROSS-SECTION AND PIPE DIMENSIONS TO BE DETERMINED BASED ON SITE SPECIFIC CONDITIONS.
3. INTERNAL PIPING WITHIN THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES IS PERFORATED PIPING TO PROMOTE FLOW INTO THE PUMP COLUMN (TRENCHES) AND CHIMNEY DRAINS (GALLERIES) AND TO REDUCE HEAD ON THE LINER.

ROSEMONT COPPER WORLD PROJECT
TSF & HLF
TYPICAL CROSS SECTION
UPGRADE STORMWATER COLLECTION
GALLERY

wood.

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST. SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:

16

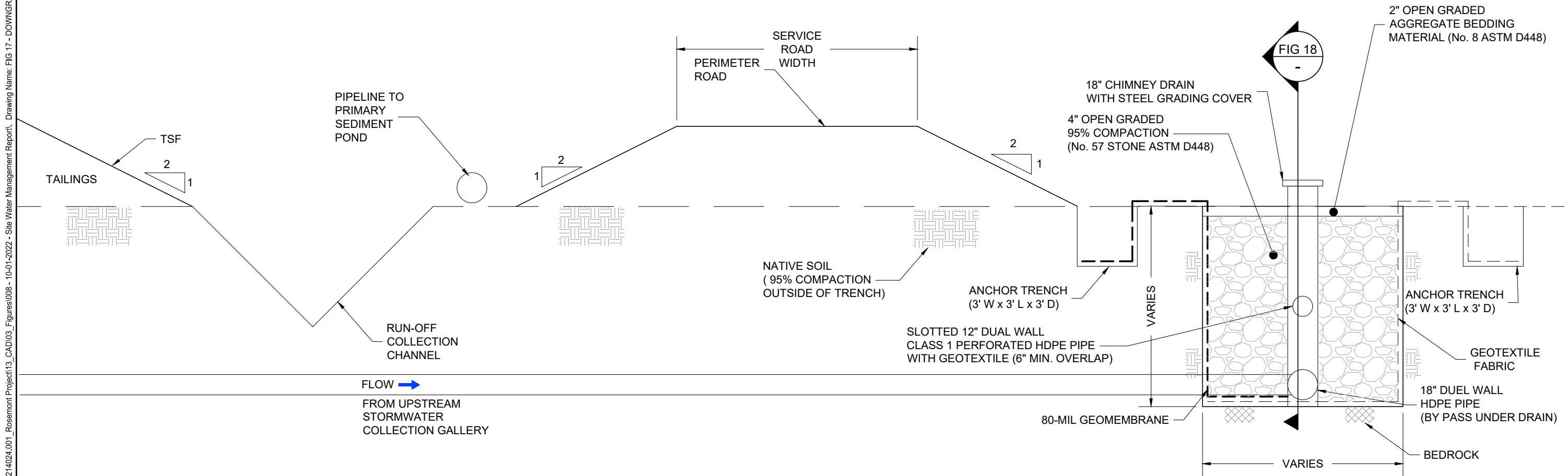
By: GG

Date: 09/12/21

Project No: 17-2021-4024

P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\, Drawing Name: FIG 17 - DOWNGRADIENT STORMWATER GALLERY_LONG SECTION.dwg Plot Date: 07/24/22 - 12:27pm

- NOTE(S):
1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
 2. CROSS-SECTION AND PIPE DIMENSIONS TO BE DETERMINED BASED ON SITE SPECIFIC CONDITIONS.
 3. INTERNAL PIPING WITHIN THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES IS PERFORATED PIPING TO PROMOTE FLOW INTO THE PUMP COLUMN (TRENCHES) AND CHIMNEY DRAINS (GALLERIES) AND TO REDUCE HEAD ON THE LINER.



TYPICAL SECTION
SCALE: N.T.S.

ROSEMONT COPPER WORLD PROJECT
TSF & HLF DOWNGRADIENT
STORMWATER COLLECTION GALLERY
TYPICAL SECTION

wood.

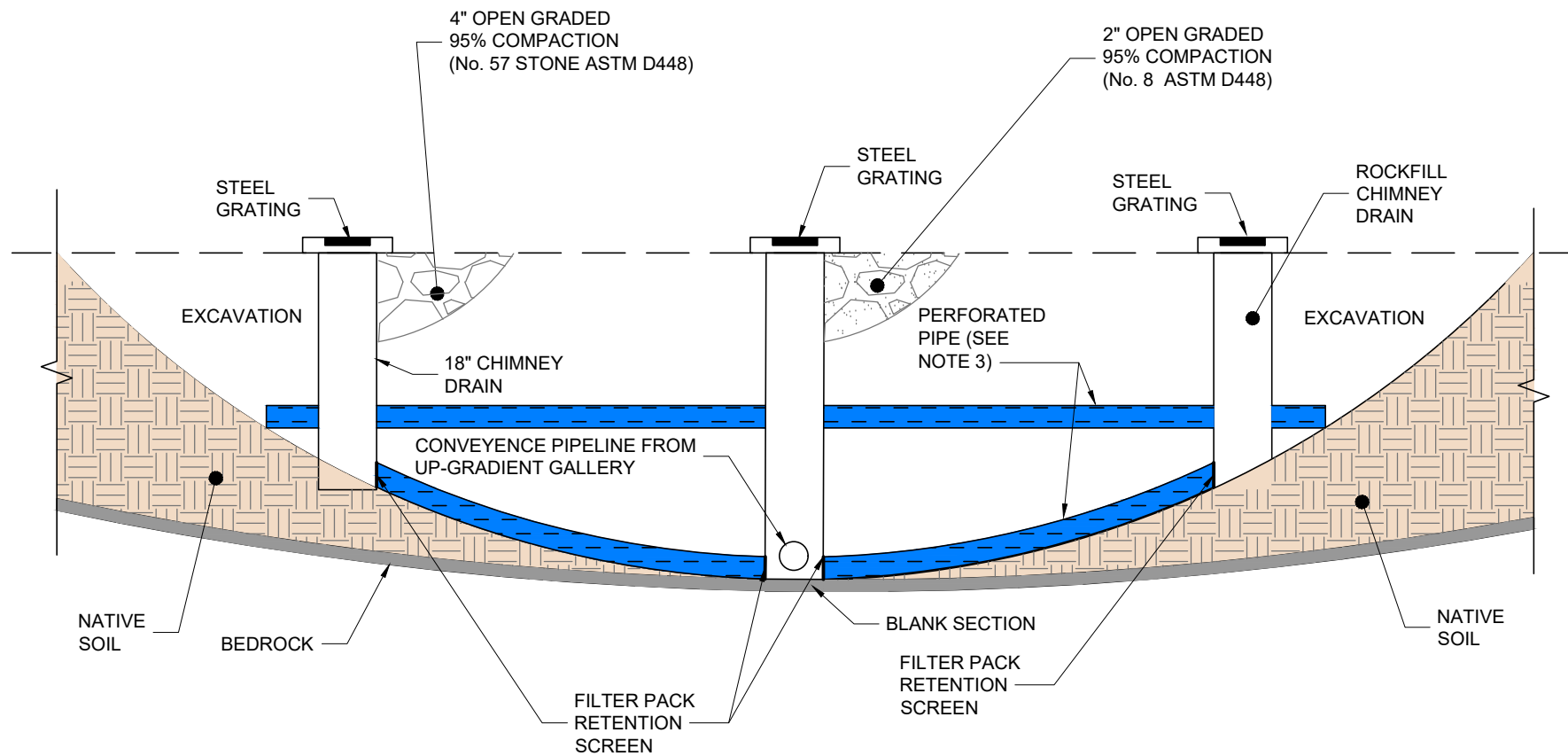
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST., SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:

17

By: GG Date: 17/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024\001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 18 - DOWNGRADIENT STORMWATER GALLERY_LAT SECTION.dwg Plot Date: 07/24/22 - 12:30pm



TYPICAL CROSS SECTION
OF TSF DOWNGRADIENT STORMWATER
COLLECTION GALLERY
USING HORIZONTAL PERFORATED PIPE
SCALE: N.T.S.

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
2. CROSS-SECTION AND PIPE DIMENSIONS TO BE DETERMINED BASED ON SITE SPECIFIC CONDITIONS.
3. INTERNAL PIPING WITHIN THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES IS PERFORATED PIPING TO PROMOTE FLOW INTO THE PUMP COLUMN (TRENCHES) AND CHIMNEY DRAINS (GALLERIES) AND TO REDUCE HEAD ON THE LINER.

ROSEMONT COPPER WORLD PROJECT
TSP & HLF
TYPICAL CROSS SECTION -
DOWNGRADIENT STORMWATER
COLLECTION GALLERY

wood.

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST. SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:

18

By: GG

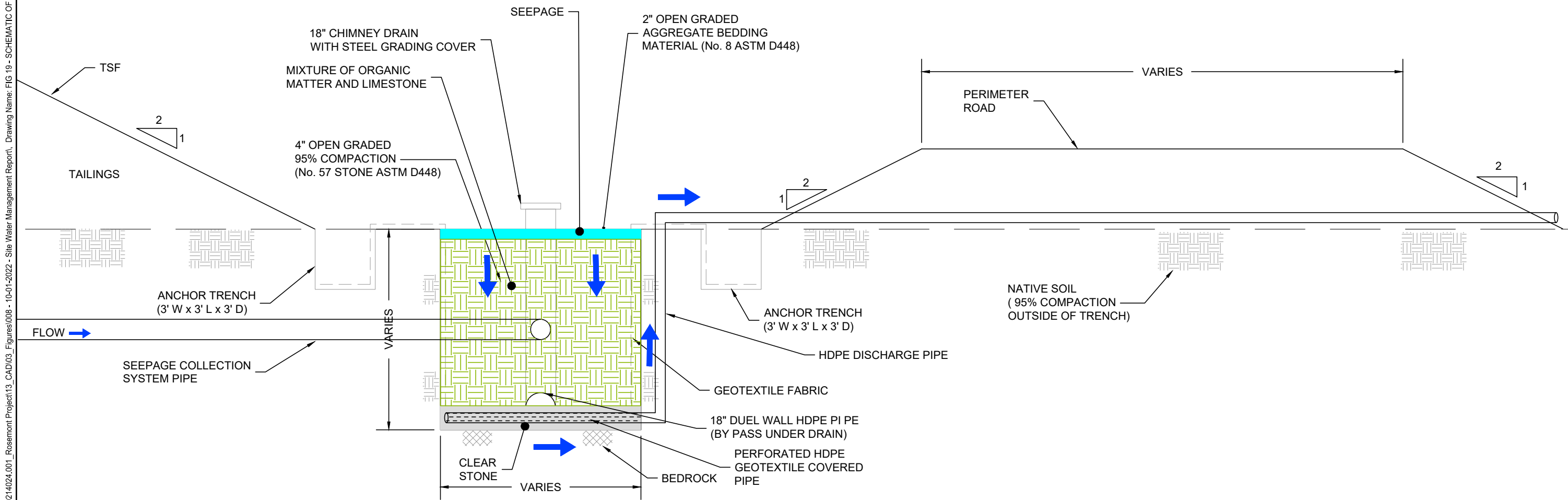
Date: 09/12/21

Project No: 17-2021-4024

Drawing Path: P:\2021\Projects\Other\1720214024\001_Rosemont Project\13_CAD\03_Figures\009 - 10-01-2022 - Site Water Management Report\, Drawing Name: FIG 19 - SCHEMATIC OF TYPICAL SULFATE REDUCTION TREATMENT CELL.dwg Plot Date: 07/27/22 - 11:38am

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.



TYPICAL SECTION
SCALE: N.T.S.

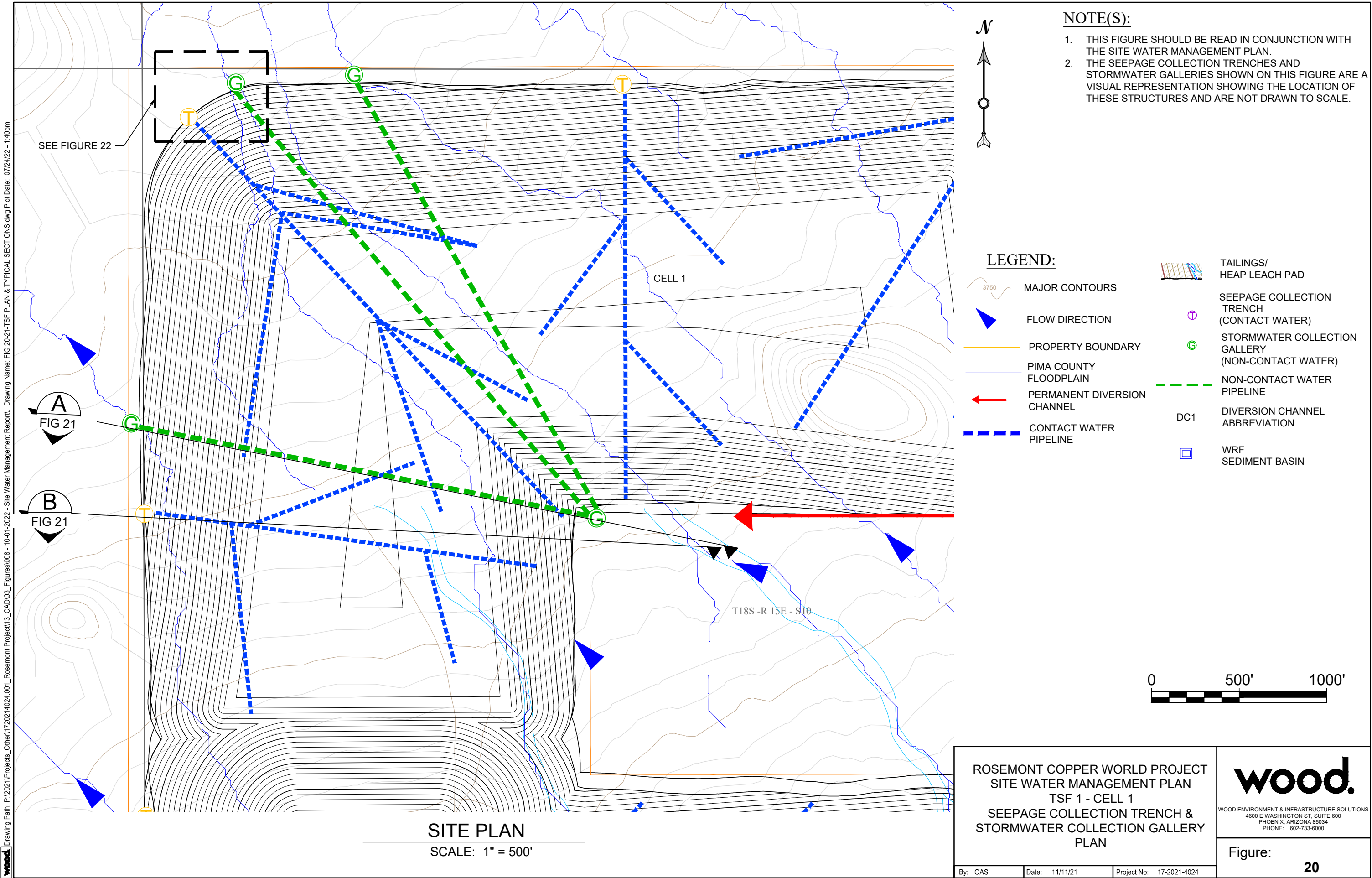
ROSEMONT COPPER WORLD PROJECT
TAILING STORAGE FACILITY
SCHEMATIC OF TYPICAL SULFATE
REDUCTION TREATMENT CELL
TYPICAL SECTION

wood.
WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST., SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

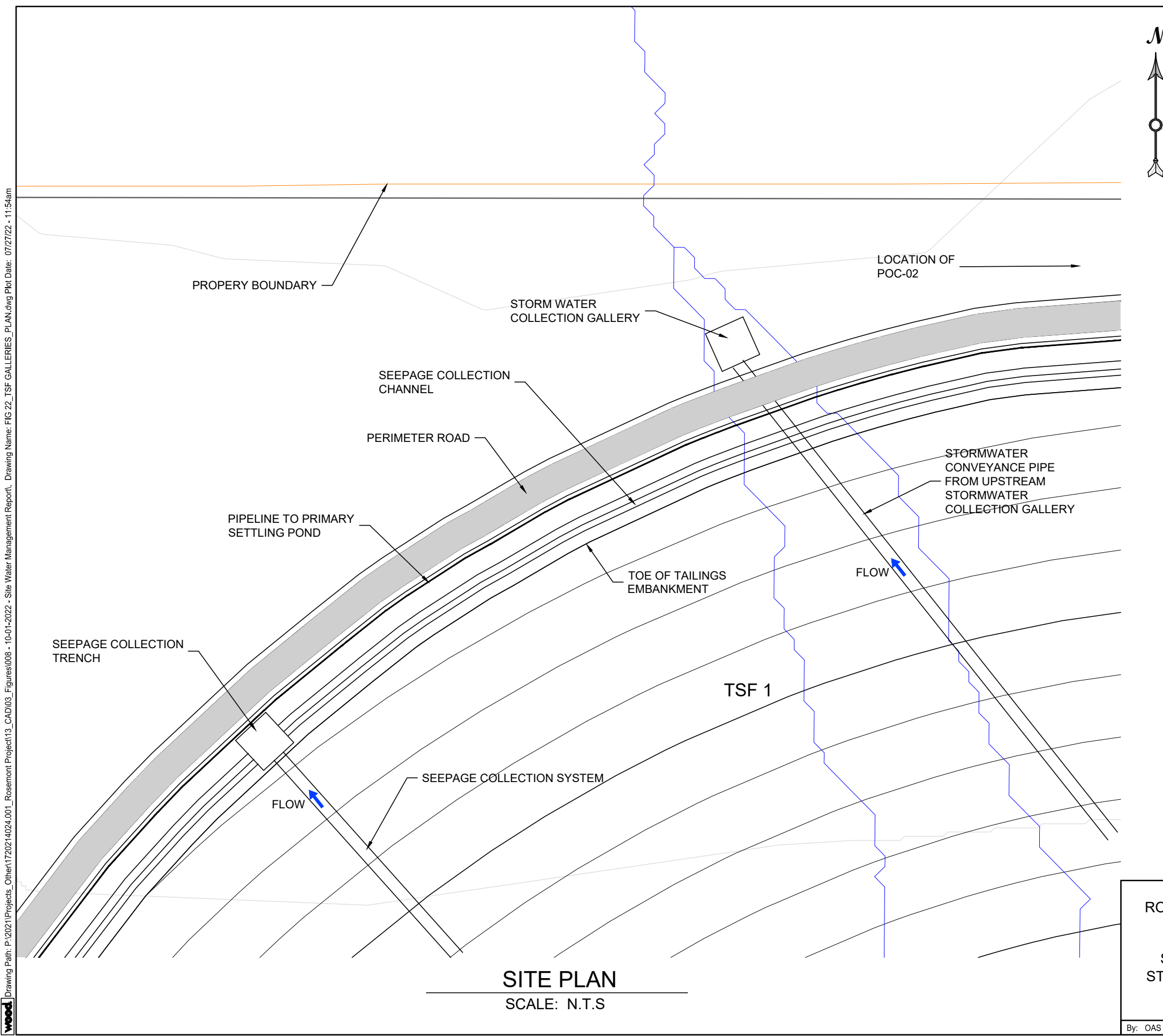
Figure:
19

By: GG Date: 17/11/21 Project No: 17-2021-4024

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 20-21-TSF PLAN & TYPICAL SECTIONS.dwg Plot Date: 07/24/22 - 1:40pm



Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 22_TSF GALLERIES_PLAN.dwg Plot Date: 07/27/22 - 11:54am



NOTE(S):

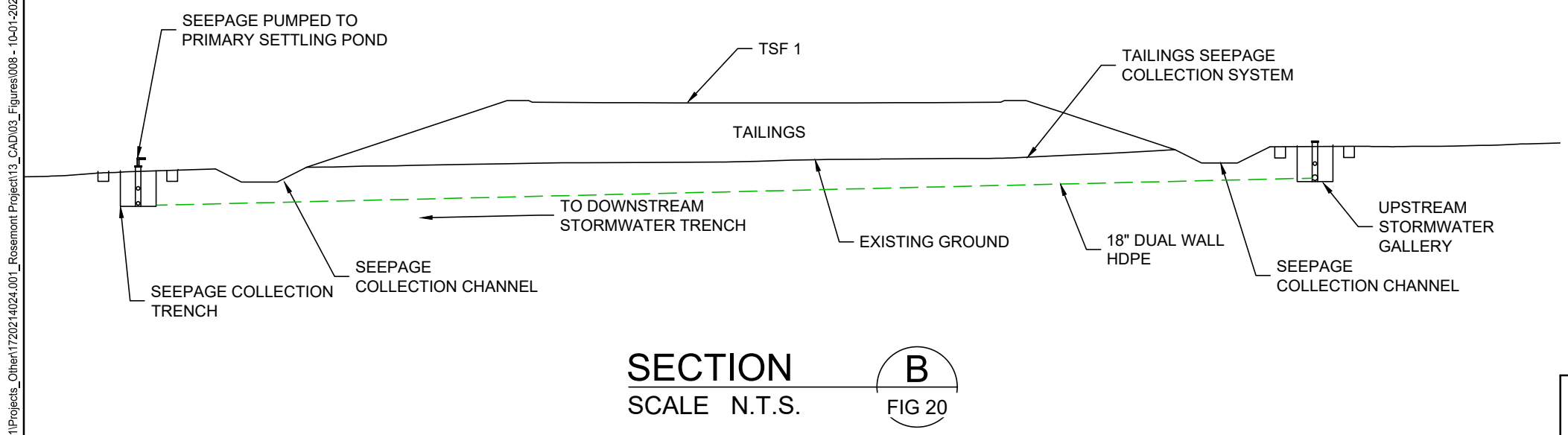
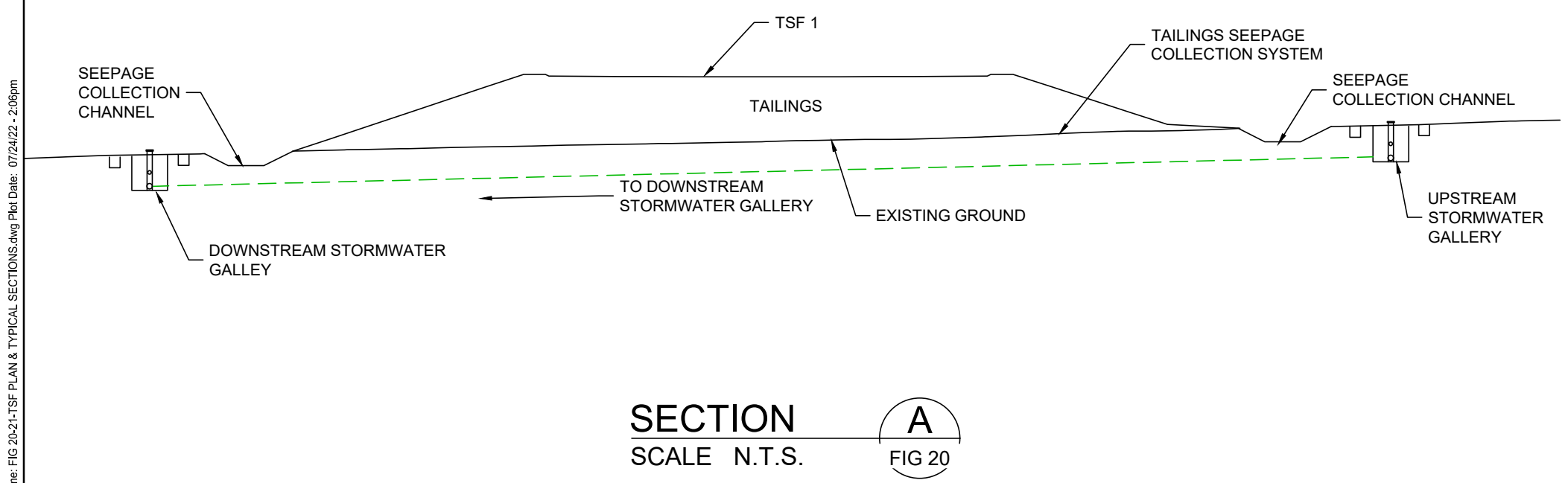
1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
2. THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES SHOWN ON THIS FIGURE ARE A VISUAL REPRESENTATION SHOWING THE LOCATION OF THESE STRUCTURES AND ARE NOT DRAWN TO SCALE.

SITE PLAN
SCALE: N.T.S

ROSEMONT COPPER WORLD PROJECT SITE WATER MANAGEMENT PLAN TSF-1 - CELL 1 SEEPAGE COLLECTION TRENCH & STORMWATER COLLECTION GALLERY PLAN		 <small>WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS 4600 E WASHINGTON ST. SUITE 600 PHOENIX, ARIZONA 85034 PHONE: 602-733-6000</small>
By: OAS	Date: 11/11/21	
Project No: 17-2021-4024		Figure: 21

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report\ Drawing Name: FIG 20-21-TSF PLAN & TYPICAL SECTIONS.dwg Plot Date: 07/24/22 - 2:06pm

- NOTE(S):
- 1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.
 - 2. THE SEEPAGE COLLECTION TRENCHES AND STORMWATER GALLERIES SHOWN ON THIS FIGURE ARE A VISUAL REPRESENTATION SHOWING THE LOCATION OF THESE STRUCTURES AND ARE NOT DRAWN TO SCALE.



ROSEMONT COPPER WORLD PROJECT SITE WATER MANAGEMENT PLAN TSF 1 - CELL 1 SEEPAGE COLLECTION TRENCH & STORMWATER COLLECTION GALLERY TYPICAL SECTIONS		wood. <small>WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS 4600 E WASHINGTON ST. SUITE 600 PHOENIX, ARIZONA 85034 PHONE: 602-733-6000</small>
By: OAS	Date: 11/11/21	
		Figure: 22

Appendix A: Site-Wide Water Balance Memorandum

Technical Memorandum

To: Javier Toro Rosemont Copper Company Tucson, Arizona	Project No: 1720214024
By: Veerakcuddy Rajasekaram PhD, PEng	Reviewed By: Dan Johnson, PE Richard Weber
Tel: (403) 387-1634	CC: File
Date: March 25, 2022	
Re: Site-Wide Water Balance Memorandum Rosemont Copper World Project	

1.0 Introduction

This technical memorandum prepared by Wood Environment and Infrastructure Solutions, Inc. (Wood) on behalf of Rosemont Copper Company (Rosemont) presents the *Site-Wide Water Balance* (SWWB) for the Rosemont Copper World Project (Project). The memorandum outlines the study approach, provides supporting data, presents the computation assumptions, and discusses results. The SWWB is critical in the design of the Project facilities, including water management components.

1.1 Project Description

Figure 1 shows the Project components, including pits, heap leach facility (HLF), tailings storage facilities (TSFs) (TSF-1 and TSF-2), waste rock facility (WRF) and associated ponds. The Project will use two primary copper (and secondary molybdenum) recovery processes: (1) for sulfide ore, and (2) for oxide ore. Summaries of these processes are described below and are illustrated on Figures 2 and 3, respectively. In summary these two processes include:

1. Sulfide ore processing through crushing, milling, flotation and concentrate leaching; thickening of tailings; and depositing fine tailings in two designated tailings storage facilities (TSFs), TSF-1 and TSF-2.
2. Oxide ore processing through crushing and agglomeration and run-of-mine ore; heap formation and leaching; and leachate Solvent Extraction (SX) and Electrowinning (EW) processing.

There are six pits; with the mining sequence allowing for the complete backfill of three of the mine pits (Heavy Weight, Copper World, and Broadtop Butte) with waste rock. The sequence of pit operation is described below:

1. Peach Pit: Operational from Year 1 through Year 5; remains as an open pit.
2. Elgin Pit: Operational from Year 1 through Year 3; remains as an open pit.
3. Heavy Weight Pit: Operational from Year 1 through Year 7; backfilled with waste rock.
4. Copper World Pit: Operational from Year 2 through Year 8; backfilled with waste rock.
5. Broadtop Pit: Operational from Year 3 through Year 10; backfilled with waste rock.

6. Rosemont Pit: Operational from Year 5 through Year 15; remains as an open pit.

Based on the current mine plan, the ore processing throughput is provided in Table 1 and summarized as:

- Sulfide Ore
 - 20,000 tons/day (tpd) in the first year (Year 1)
 - 30,000 tpd from Year 2 through Year 4
 - 60,000 tpd from Year 5 through Year 15
- Oxide Ore
 - 20,000 tpd in the first year
 - 30,000 tpd from Year 2 through Year 4
 - 35,000 tpd in Year 5
 - 45,000 tpd from Year 6 through Year 8
 - 40,000 in Year 9 (Rosemont Communication)

2.0 Approach, Data, And Assumptions

The SWWB considers water consumption, water loss through evaporation and material entrainment, water reclaimed from processing, seepage collection for TSFs, non-contact stormwater, and contact water from mine pits and WRFs. With these considerations, the SWWB is used to predict the volume of water loss and estimates the amount of make-up/fresh water needed for operations. Rosemont currently holds a water right for up to 6,000 acre-feet of groundwater. This water right will be the primary water source for start-up of the operation and make-up (fresh) water during the life of the mine. Discussion of individual processes (i.e., sulfide and oxide ore types) and facility water demands follows:

2.1 Sulfide Ore Processing and Tailings

Figure 2, illustrating the sulfide ore processing flow sheet, shows the water flow across various facilities. The sulfide ore is crushed using sufficient water and then sent through a mill for further size reduction prior to the flotation process. The milled ore is passed to the flotation plant where the metal-rich froth is extracted for further processing. The remaining slurry/tailings are passed through a thickener to extract water and form thickened tailings. Rosemont will also use a concentrate leach circuit in combination with the flotation circuit. The thickened tailings from the sulfide circuit are then conveyed to the TSF where the tailings will be cycloned to separate the sand fraction from the fines. The segregated sand fraction will be used in the construction of the TSF embankment, and the fine tailings are stored to the interior of the TSFs.

TSF-1 and TSF-2 will be developed as the mining operation progresses. Table 2 shows the progression of TSF construction and operation. Construction of the TSF-1 starter dam will begin in Year -2 with tailings deposition beginning in Year 1 and continuing through Year 15. Starter dam construction for TSF-2 is planned to start in Year 10 with tailings deposition beginning in Year 11 and continuing through the end-of-mine life (Year 15).

As the thickened tailings are conveyed to the TSF, the cyclone removes the sand fraction for use in embankment construction and the fine tailings are deposited to form a beach within the TSF. The deposition

will be managed to create a pool in the TSF where water will collect (decant pool). Water from the decant pool will be reclaimed and pumped to the Primary Settling Basin for use as process water.

Table 3 presents the primary data and engineering assumptions for general site conditions for the SWWB. The primary data and assumptions used in the SWWB associated with the sulfide ore processing and tailings are provided in Table 4. Rosemont estimates that the initial water content of ore (pre-crushing) is 3.5 percent (%) (by weight) and will rise to 5% with the addition of water during crushing. The crushing water requirement will be fulfilled partially from process water and fresh water. The water content of thickened tailings is assumed at 31.8%. Sand extracted by cycloning is assumed to be 30% of dry tailings and the loss of water during cycloning is assumed to be 12%. Using the settled dry density and the bulk density of tailings the interstitial water content is calculated as 31.6%.

Based on the assumptions used for the design of TSFs, the tailings embankments occupy 20% of TSFs footprint area. The remaining 80% of the TSFs areas are inclusive of the decant pond area, wet beach area, dry beach area, and the drying beach area which are assumed to be 12%, 20%, 24%, and 24% of the tailings area, respectively. The evaporation factors for the decant pond area, wet beach area, dry beach area, and the drying beach area are assumed to be 0.75, 0.7, 0.05, and 0.5, respectively. These factors are applied to the pan-evaporation values to estimate the evaporation from different TSF areas. For example, in the decant pond area, the 0.75 evaporation factor is applied to the total annual evaporation rate of 91.2 inches, resulting in an annual evaporation rate from the decant area of 68.4 inches. The annual seepage rates from TSF-1 and TSF-2, at the end-of-mine condition are estimated to be 695 gpm and 378 gpm, respectively. About 684 gpm of seepage water from TSF-1 can be collected and reused. Similarly, about 372 gpm of seepage water from TSF-2 can be collected and reused.

2.2 Oxide Ore Processing and Heap Leaching

Figure 3 provides a flow sheet for the oxide ore processing including water flow across various stages (leachate, pregnant solution, and barren (raffinate) solution). Both run-of-mine ore and crushed and agglomerated ore will be placed on the HLP. Run-of-mine ore will be hauled directly the HLP, dumped and spread. Other oxide ore is crushed using sufficient water and then run through the agglomerator prior to placement on the HLP. Agglomeration improves the leaching process by binding up small particles that can inhibit percolation of solution. The agglomerated ore will be conveyed to the HLP where a dilute sulfuric acid solution will be applied to leach the copper from the ore. As the solution percolates through the ore, it is collected in a series of overliner drain pipes or makes contact with the liner, both of which direct the solution to the Pregnant Leach Solution (PLS) Pond. The leachate collected from the heap leach pad drainage system is temporarily stored in the PLS Pond. From the PLS Pond, the pregnant solution is sent to the SX-EW plant. The barren (raffinate) solution, which is the solution after the removal of copper, is sent to the Raffinate Pond. Additional acid is added to the solution in the Raffinate Pond to bring the pH to the required level for leaching. Evaporation losses and other water losses are compensated by adding fresh water as needed. The footprint of the HLP progresses from Year 1 through Year 9, as summarized in Table 2.

The primary data and assumptions used in the SWWB associated with oxide ore processing are provided in Table 5. The initial water content of ore (pre-crushing) is assumed at 3.5% and will rise to 5% after water is added during crushing. Water used during the crushing of ore is from fresh water. The water content of the

agglomerated ore is assumed at 15%. The additional water requirement for agglomeration is fulfilled from freshwater.

2.3 Pits

Figure 4 provides the flow sheet for water associated with the pits. Each pit receives direct precipitation, storm water runoff from the local catchment area and groundwater discharge. For purposes of the site-wide water balance, the combined groundwater yield for Peach Pit, Elgin Pit, Heavy Weight Pit, Copper World Pit and Broadtop Butte Pit is estimated to be 65 gallons per minute (gpm). Rosemont Pit is estimated to have a groundwater yield of 296 gpm. Groundwater inflow to the pits, precipitation, and stormwater runoff into the pits (all but the Rosemont Pit) will be used as make-up water for the processing operations and or dust suppression within the pits. The SWWB takes into account evaporative losses related to water from the pits. The assumed surface area for the pits is 0.5 acres for the five Satellite pits and 15 acres for the Rosemont Pit. Water associated with dewatering of the Rosemont pit will be used for dust suppression within the pit or released to an existing drainage east of the Rosemont Pit. Water collected in the Rosemont pit sump will be used for dust suppression within the pit or for process make-up water.

2.4 Surface Water Management

Surface water management is discussed in more detail in the Site Water Management Plan (Wood, 2022a). A summary of surface water management, as described in the Site Water Management Plan, is to divert and/or capture and release non-contact stormwater runoff. This will be accomplished through a series of diversion channels and stormwater collection galleries to route water around the facilities and release into the existing off-site drainages. Figure 1 presented the surface water management features at final configuration. Further details on the surface water management are provided in the Site Water Management Plan (Wood, 2022a).

2.5 Groundwater Management

Rosemont holds a groundwater right to 6,000 acre-feet that is anticipated as the primary fresh water source for the start-up of operations of the mine and will be the source of make-up/fresh water during operations. The wellfield is located northwest of the Project area. Pit dewatering wells on the west side of the Santa Rita Mountains will also be used for fresh make-up water.

3.0 Water Balance Summary

The SWWB was developed to aid in the design of the processing facilities and development of the Site Water Management Plan. The primary goal is to determine when and if additional water sources are needed to meet the demands of the Project. Rosemont's decision in handling non-contact water or stormwater runoff, is to divert, capture and release as much non-contact stormwater runoff as possible.

Table 6 provides the annual water balance summary. As indicated in Table 6, the Project operations will have a surplus of water during the first four years of operations. Once production in Year 5 increases to 60,000 tons per day of sulfide ore, a water deficit will occur, with the peak water deficit of 1000 gpm occurring in Year 6. Based on the SWWB model, the water deficit will occur during Years 5 through 8. A surplus of water will be realized from Year 9 through the end of mining (Year 15).

4.0 References

Bowman Consulting Group (Bowman), 2022. Copper World Project Baseline and Final Facility Configuration Hydrology Modeling Report, Revision 3. August 18, 2022.

Wood, 2022a. Site Water Management Plan. Copper World Project. June 24, 2022.

Wood, 2022b. Civil and Geotechnical Design Criteria. Copper World Project. August 2022.

Attachments

Figures:

- Figure 1 – Project Location and Facility Layout
- Figure 2 – Sulfide Ore Processing and Tailings Storage Facilities Process Flow Diagram
- Figure 3 – Oxide Ore Processing and Heap Leach Facility Process Flow Diagram
- Figure 4 – Mine Pits Flow Diagram

Tables:

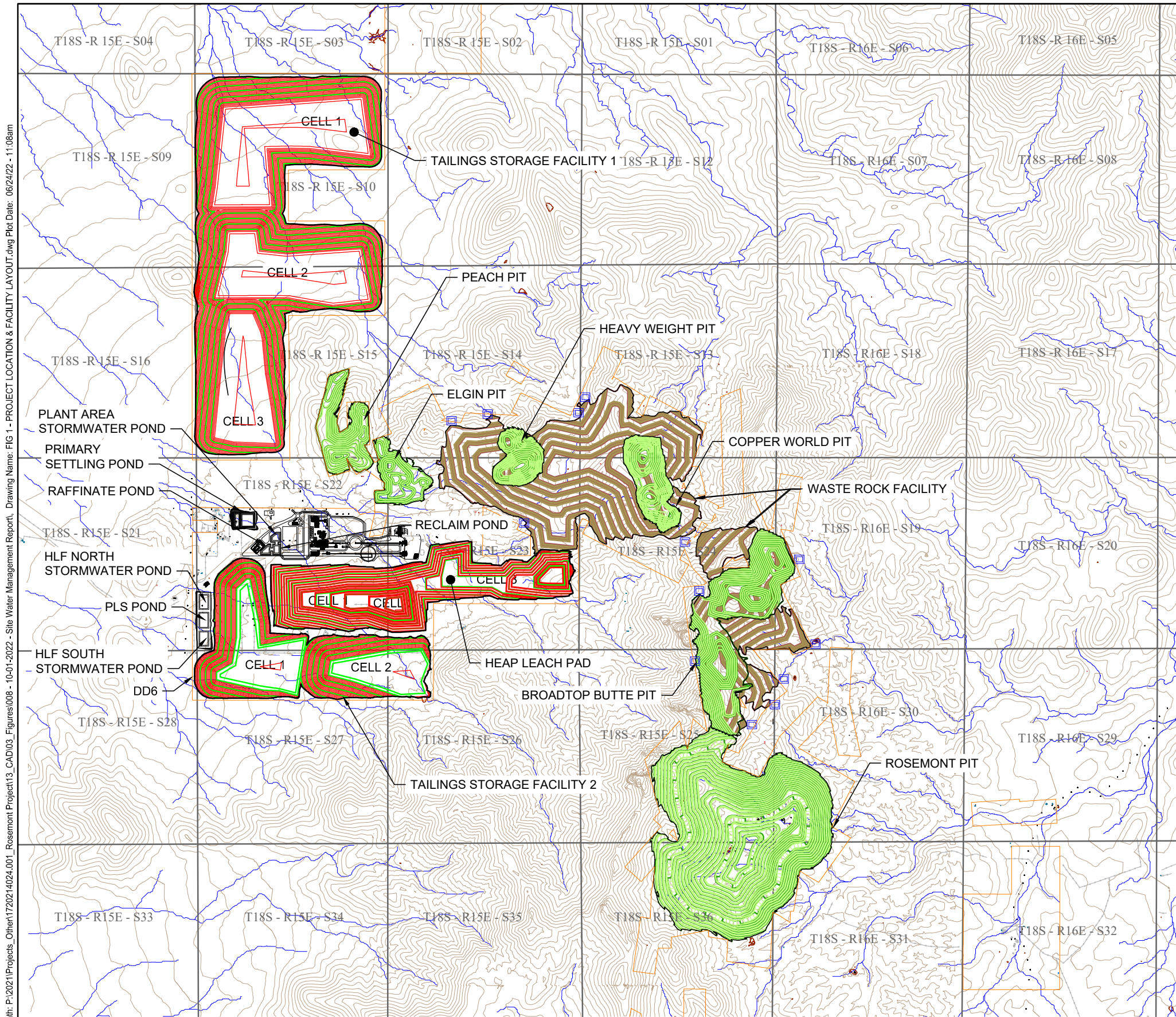
- Table 1 – Annual Ore Processing
- Table 2 - Tailings and Heap Leach Area Progression
- Table 3 – General Data Inputs for Water Balance
- Table 4 - Primary Data for Sulfide Ore Processing and Tailings
- Table 5 – Primary Data for Oxide Ore Processing and Heap Leaching
- Table 6 – Water Balance Summary

ACRONYMS AND ABBREVIATIONS

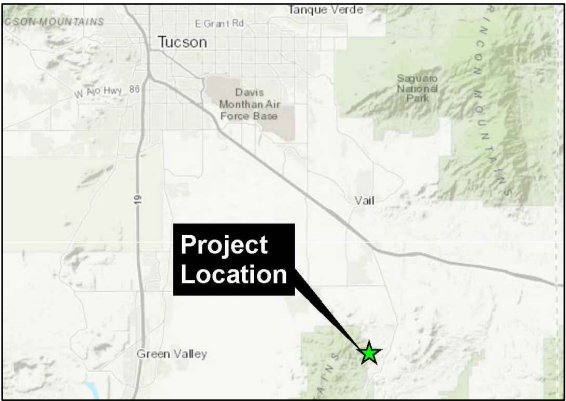
%	Percent
ADEQ	Arizona Department of Environmental Quality
APP	Aquifer Protection Permit
BADCT	Best Available and Demonstrated Control Technologies
EOM	End-of-Mine
HLF	Heap Leach Facility
HLP	Heap Leach Pad
HW	Heavy Weight
in/year	inches per year
gal/ton	gallons per ton
gpm	gallons per minute
PLS	Pregnant Leach Solution
Project	Rosemont Copper World Project
Rosemont	Rosemont Copper Company
SX-EW	Solvent Extraction – Electrowinning
tpd	tons per day
TSF	Tailings Storage Facility
TSF-1	Tailings Storage Facility 1
TSF-2	Tailings Storage Facility 2
Wood	Wood Environment & Infrastructure Solutions, Inc.
WRF	Waste Rock Facility

Figures

Drawing Path: P:\2021\Projects_Other\1720214024.001_Rosemont Project\13_CAD\03_Figures\008 - 10-01-2022 - Site Water Management Report, Drawing Name: FIG 1 - PROJECT LOCATION & FACILITY LAYOUT.dwg Plot Date: 06/24/22 - 11:08am



SITE PLAN
SCALE: 1" = 3000'



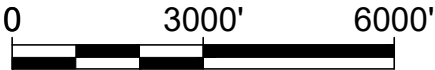
KEY PLAN
SCALE: N.T.S.

NOTE(S):

1. THIS FIGURE SHOULD BE READ IN CONJUNCTION WITH THE SITE WATER MANAGEMENT PLAN.

LEGEND:

- | | |
|------------------------|--------------------------|
| MAJOR CONTOURS ONLY | WASTE ROCK |
| PROPERTY BOUNDARY | PIT EXCAVATION AREA |
| PIMA COUNTY FLOODPLAIN | WRF SEDIMENT POND |
| ROAD | TAILINGS/ HEAP LEACH PAD |



ROSEMONT COPPER WORLD PROJECT
WATER HYDROLOGY
SITE WIDE WATER BALANCE
PROJECT LOCATION & FACILITY LAYOUT

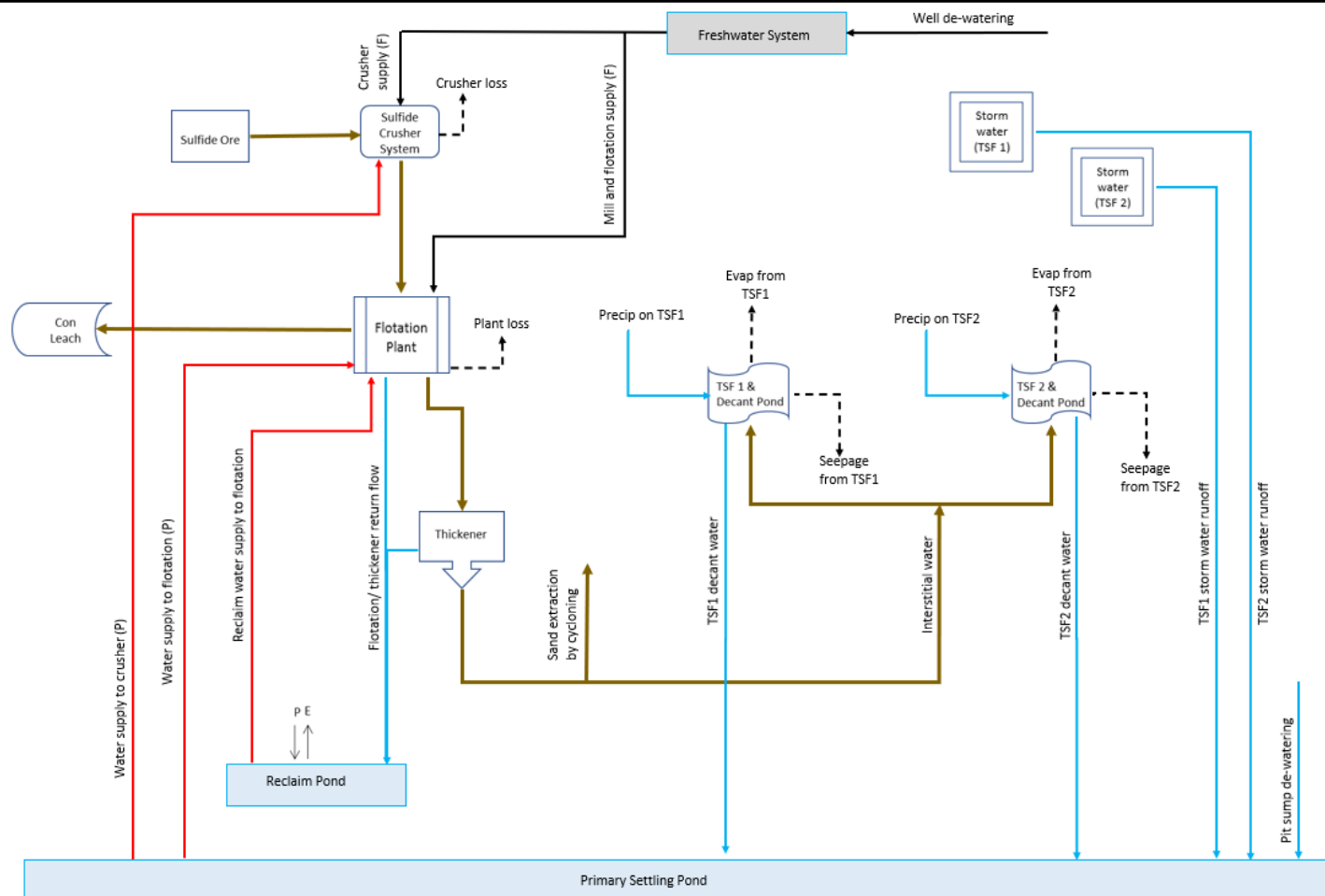
wood.

WOOD ENVIRONMENT & INFRASTRUCTURE SOLUTIONS
4600 E WASHINGTON ST, SUITE 600
PHOENIX, ARIZONA 85034
PHONE: 602-733-6000

Figure:

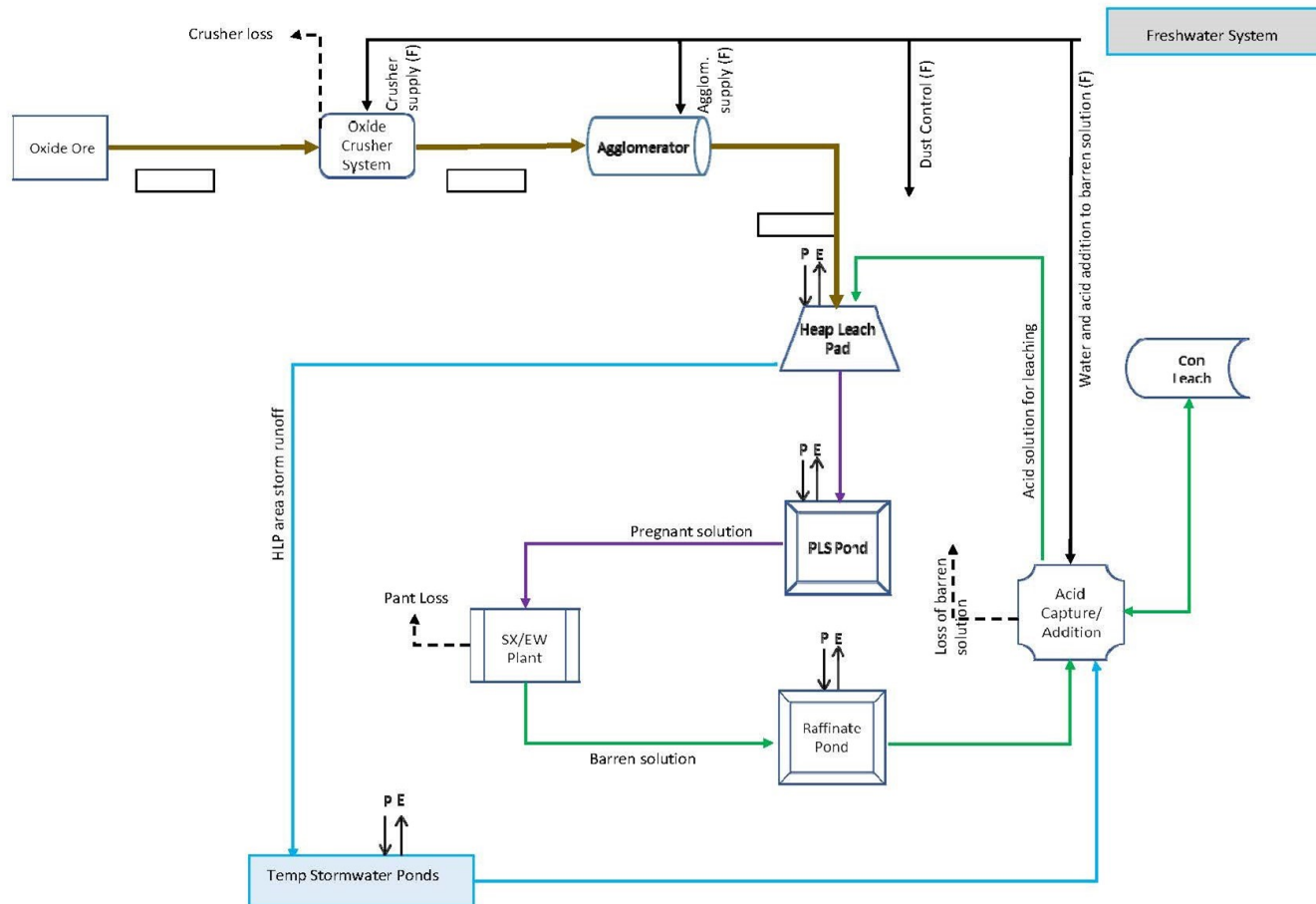
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By: OAS Date: 21/12/21 Project No: 17-2021-4024



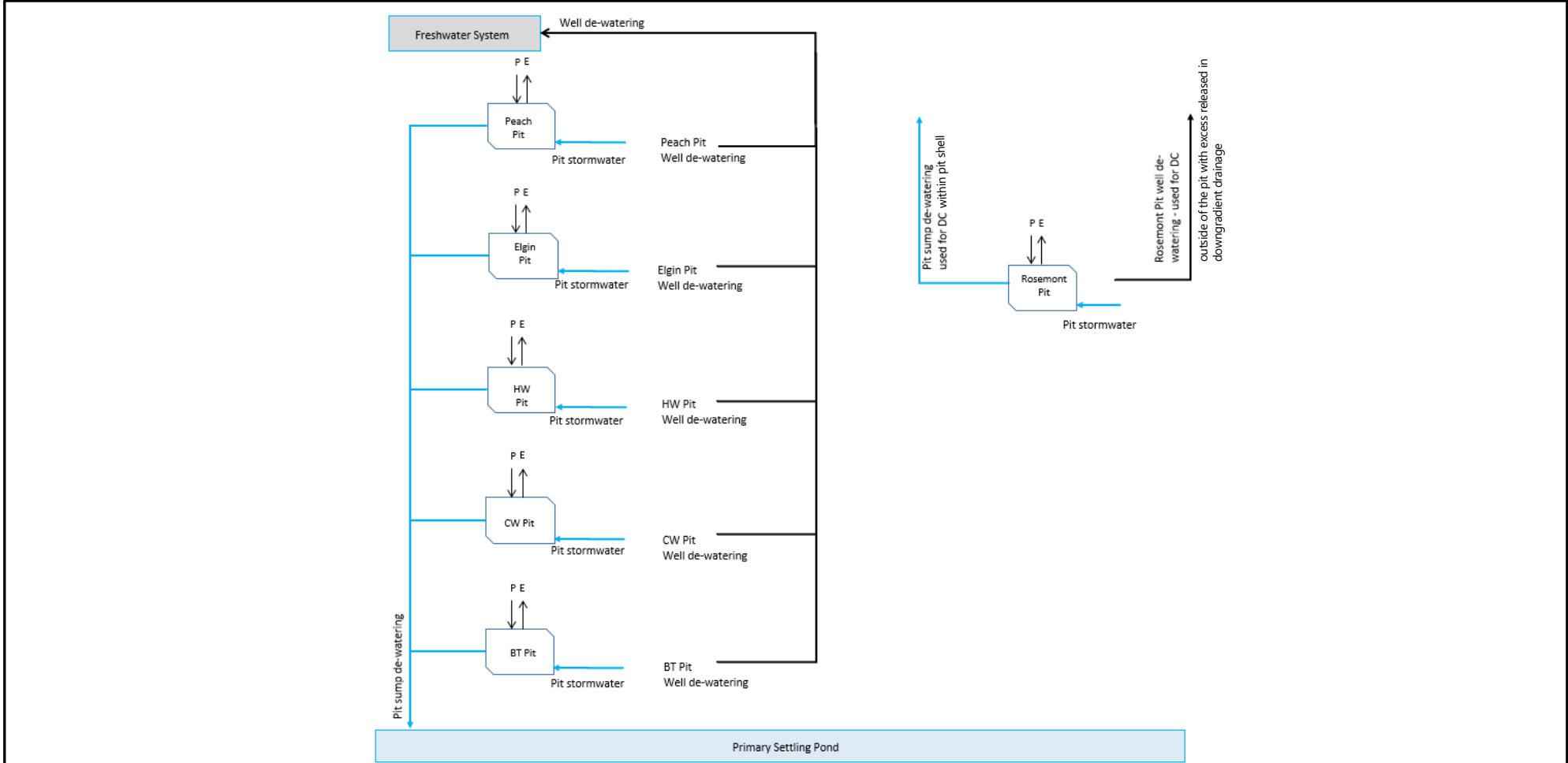
wood.

CLIENT	ROSEMONT COPPER COMPANY	DRN BY VR	PROJECT NO. 1720214024.001
PROJECT	ROSEMONT COPPER WORLD PROJECT	CHK BY DJ	DATE 1/10/2022
TITLE	SULFIDE ORE PROCESSING SUMMARY FLOWSHEET		FIGURE 2



wood.

CLIENT	ROSEMONT COPPER COMPANY	DRN BY VR	PROJECT NO. 1720214024.001
PROJECT	ROSEMONT COPPER WORLD PROJECT	CHK BY DJ	DATE 1/10/2022
TITLE	OXIDE ORE PROCESSING SUMMARY FLOWSHEET		FIGURE 3



wood.

CLIENT	ROSEMONT COPPER COMPANY	DRN BY VR	PROJECT NO. 1720214024.001
PROJECT	ROSEMONT COPPER WORLD PROJECT	CHK BY DJ	DATE 1/10/2022
TITLE	MINE PIT FLOW DIAGRAM		FIGURE 4

Tables

Table 1: Annual Ore Processing

Year	Ore Processing Rate (tons/day)	
	Sulfide Ore	Oxide Ore
1	20,000	20,000
2	30,000	30,000
3	30,000	30,000
4	30,000	30,000
5	60,000	35,000
6	60,000	45,000
7	60,000	45,000
8	60,000	45,000
9	60,000	39,208
10	60,000	0
11	60,000	0
12	60,000	0
13	60,000	0
14	60,000	0
15	60,000	0

Note:
tons/day - tons per day

Table 2: Tailings and Heap Leach Area Progression

Year	Area Covered by Tailings /Heap Leach Facility (acres)			
	TSF-1	TSF-2	TSF Total	HLF
1	348		348	100
2	390		390	156
3	431		431	188
4	473		473	218
5	577		577	252
6	622		622	272
7	667		667	272
8	712		712	272
9	757		757	336
10	802	135	938	
11	883	173	1058	
12	883	211	1095	
13	883	249	1133	
14	883	287	1171	
15	946	307	1190	

Notes:

HLF - Heap Leach Facility

TSF - Tailings Storage Facility

TSF-1 - Tailings Storage Facility 1

TSF-2 - Tailings Storage Facility 2

Table 3: General Data Inputs for Water Balance

	General Data		
	Description	Data	Source
1	Dust control requirement (gpm)	150	Engineering Estimate for Environmental Losses
2	Annual Average Pan Evaporation (in)	91.2	Rosemont Design Criteria (Wood, 2022b)
3	Annual Average Precipitation (in)	19.7	Rosemont Design Criteria (Wood, 2022b)
4	Estimated Seepage Loss (gpm/ac)	0.86 (TSF-1) 1.22 (TSF-2)	Engineering Estimate
5	Average Area of Ponds (ac)	4	Based on Initial Designs

Notes:

gpm – gallons per minute

in - inches

in/yr – inches/year

ac – acres

Table 4: Primary Data for Sulfide Ore Processing and Tailings

	Data for Sulfide Ore, Mill/Plant and Tailings		
	Description	Data	Source
1	Ore water content (% by weight)	3.5	Rosemont Design Criteria (Wood, 2022b)
2	Ore water content after crushing (% by weight)	5	Engineering estimate
3	Loss to environment at crushing (% by weight)	7	Rosemont Design Criteria (Wood, 2022b)
4	Fraction of process water supply to crusher (% of total)	85	Engineering estimate for optimal water use
5	Fraction of fresh water supply to crusher (% of total)	15	Engineering estimate for optimal water use
6	Total water requirement at flotation plant (g/ton ore)	175	Engineering estimate
7	Mill/flotation plant fresh water supply (fraction of total water supply, as %)	35	Engineering estimate
8	Thickened tailings water content (% by weight)	31.8	Engineering estimate /optimized
9	Sand separated by cycloning (% by weight)	30	Engineering estimate
10	Loss of water during cycloning (fraction of thickened. tailings water content, as %)	12	Engineering estimate
11	Settled dry density of fine tailings (lb/ft ³)	90	Rosemont Design Criteria (Wood, 2022b)
12	Specific gravity of fine tailings (dimensionless)	2.65	Primary data
13	Average saturation (dimensionless)	1	Primary data
14	Bulk density of fine tailings (lb/ft ³)	118	Rosemont Design Criteria (Wood, 2022b)
15	Interstitial water content (% by weight)	31.6	Calculated from primary data
16	Embankment area (fraction of footprint, % of total)	20	Based on initial design
17	Decant pond area (% of tailings area)	12	Based on initial designs
18	Tailings wet beach area (% of tailings area)	20	Based on initial designs
19	Tailings dry beach area (% of tailings area)	24	Based on initial designs
20	Tailings drying beach area (% of tailings area)	24	Based on initial designs
21	Evaporation factor for pond	0.75	Engineering estimate
22	Evaporation factor for wet beach area	0.7	Engineering estimate
23	Evaporation factor for dry beach area	0.05	Engineering estimate
24	Evaporation factor for drying beach area	0.5	Engineering estimate
25	Plant site catchment area (ac)	45	Based on initial design
26	Avg. surface area: PLS Pond, Reclaim Pond, Raffinate Pond (ac)	4	Based on initial design
27	Avg. surface area: storm ponds (ac)	2.5	Based on initial design

	Data for Sulfide Ore, Mill/Plant and Tailings		
	Description	Data	Source
28	Plant site runoff rate (gpm/ac)	0.179	From hydrological analysis (Bowman, 2021)
29	Undisturbed TSF area runoff rate (gpm/ac)	0.179	From hydrological analysis (Bowman, 2021)

Notes:

ac – acres

g/ton – gallons per ton

gpm/ac - gallons per minute per acre

gpm/sf- gallons per minute per square foot

lb/ft³ – pound per cubic foot

PLS – Pregnant Leach Solution

Table 5: Primary Data for Oxide Ore Processing and Heap Leaching

	Data for Oxide Ore and Heap Leach Facility		
	Description	Data	Source
1	Ore water content (% by weight)	3.5	Rosemont design criteria (Wood, 2022)
2	Ore water content after crushing (% by weight)	5	Engineering estimate
3	Loss to environment at crushing (% by weight)	7	Rosemont design criteria (Wood, 2022)
4	Fraction of process water supply to crusher (as %)	80	Engineering estimate for optimal water use
5	Fraction of fresh water supply to crusher (as %)	20	Engineering estimate for optimal water use
6	Water content at agglomeration (% by weight)	15	Engineering estimate
7	Fraction of process water supply to agglomerator (as %)	80	Engineering estimate for optimal water use
8	Fraction of fresh water supply to agglomerator (as %)	20	Engineering estimate for optimal water use
9	Undisturbed HLF area runoff rate (gpm/ac)	0.179	From hydrological analysis (Bowman, 2021)
10	Leaching solution application rate (gpm/sf)	0.004	Rosemont design criteria (Wood, 2022)
11	Leaching solution application total (gpm)	3000	Rosemont design criteria (Wood, 2022)
12	Loss of barren solution at SX/EW plant (% by weight)	5	Engineering estimate for optimal water use
13	Loss of barren solution at Con Leach (% by weight)	2	Engineering estimate for optimal water use

Notes:

gpm/ac - gallons per minute per acre

gpm/sf- gallons per minute per square foot

SX/EW - Solvent Extraction – Electrowinning

Table 6: Water Balance Summary Table

Year	Available Surface Water Runoff from HLP (Footprint)	Available PRC Water from Mill + Plant	Pit Sump Dewatering to PRC Water Pond (After DC Supply - Contact Water)	Total PRC Water Available	PRC Water Supply to HLP	PRC Water Supply to Mill+ Plant	Total PRC Water Supply	PRC Water Deficit	PRC Water Excess	Available Fresh Water from Wells (After DC Supply of Fresh Water)	FRESH Water Supply to HLP	FRESH Water Supply to Mill+ Plant	FRESH Water Supply to DC	Total Fresh Water Supply	Fresh Water Deficit	Fresh Water Excess	Total Make-up Water Requirement		Available Surface Water		Accessible Groundwater		System Water Balance		
	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	gpm	Ac-ft/yr	gpm	Ac-ft/yr	gpm	Ac-ft/yr	gpm	Ac-ft/yr
1	33.47	486.12	20.54	540.13	492.57	785.06	1277.63	737.50	0.00	0.00	342.50	894.69	54.90	1292.09	1292.09	0.00	2029.6	3276.0	1116.6	1802.3	3697	5967	2784	4493.5	
2	23.45	756.93	44.87	825.25	738.85	1173.04	1911.89	1086.64	0.00	0.00	433.43	1342.03	35.90	1811.36	1811.36	0.00	2898.0	4677.7	396.2	639.4	3678	5937	1176	1898.3	
3	17.72	713.89	163.07	894.69	738.85	1173.04	1911.89	1017.21	0.00	0.00	439.16	1342.03	9.90	1791.09	1791.09	0.00	2808.3	4532.9	396.2	639.4	3652	5895	1240	2001.1	
4	12.35	669.81	163.07	845.23	738.85	1173.04	1911.89	1066.66	0.00	0.00	444.53	1342.03	9.90	1796.46	1796.46	0.00	2863.1	4621.4	432.5	698.1	3652	5895	1221	1971.3	
5	6.27	1505.34	163.07	1674.67	862.00	2336.96	3198.95	1524.28	0.00	0.00	488.21	2684.07	9.90	3182.18	3182.18	0.00	4706.5	7596.8	432.5	698.1	3652	5895	-622	-1004.1	
6	2.69	1458.10	163.07	1623.86	1108.28	2336.96	3445.24	1821.38	0.00	0.00	569.12	2684.07	9.90	3263.08	3263.08	0.00	5084.5	8206.9	432.5	698.1	3652	5895	- 1000	-1614.2	
7	2.69	1410.87	163.07	1576.62	1108.28	2336.96	3445.24	1868.62	0.00	0.00	569.12	2684.07	9.90	3263.08	3263.08	0.00	5131.7	8283.1	585.9	945.7	3652	5895	-894	-1442.9	
8	2.69	1363.63	106.66	1472.98	1108.28	2336.96	3445.24	1972.26	0.00	0.00	569.12	2684.07	44.90	3298.08	3298.08	0.00	5270.3	8506.9	585.9	945.7	3687	5951	-998	-1610.2	
9	0.00	1316.40	106.66	1423.06	110.81	2336.96	2447.77	1024.71	0.00	0.00	241.45	2684.07	44.90	2970.42	2970.42	0.00	3995.1	6448.6	667.3	1077.0	3687	5951	359	579.5	
10	0.00	1221.57	23.93	1245.50	0.00	2336.96	2336.96	1091.46	0.00	0.00	0.00	2684.07	70.90	2754.97	2754.97	0.00	3846.4	6208.6	667.3	1077.0	3713	5993	534	861.5	
11	0.00	1021.28	23.93	1045.21	0.00	2336.96	2336.96	1291.75	0.00	0.00	0.00	2684.07	70.90	2754.97	2754.97	0.00	4046.7	6531.9	667.3	1077.0	3713	5993	333	538.2	
12	0.00	1305.15	23.93	1329.08	0.00	2336.96	2336.96	1007.88	0.00	0.00	0.00	2684.07	70.90	2754.97	2754.97	0.00	3762.8	6073.7	667.3	1077.0	3713	5993	617	996.4	
13	0.00	1630.67	23.93	1654.59	0.00	2336.96	2336.96	682.37	0.00	0.00	0.00	2684.07	70.90	2754.97	2754.97	0.00	3437.3	5548.2	667.3	1077.0	3713	5993	943	1521.8	
14	0.00	1956.18	23.93	1980.11	0.00	2336.96	2336.96	356.85	0.00	0.00	0.00	2684.07	70.90	2754.97	2754.97	0.00	3111.8	5022.8	667.3	1077.0	3713	5993	1268	2047.2	
15	0.00	1990.11	23.93	2014.04	0.00	1952.24	1952.24	0.00	61.80	0.00	0.00	2240.48	70.90	2311.38	2311.38	0.00	2311.4	3730.8	667.3	1077.0	3713	5993	2069	3339.2	

Notes:
Ac-ft/yr - acre-feet per year
gpm – gallons per minute
HLP – Heap Leach Pad
PRC – Process water and/or Contact water